



Edited by  
Marco D'Agostini

*“Mighib La Hullum” – Food for all – Green farms for food security and nutrition of rural families – Wolaita area – Ethiopia” Project (Case n. 128/2017)  
financed by the Presidency of the Council of Ministers - Distribution of the eight per thousand share of IRPEF directly managed by the State for the year 2017*

# FINAL REPORT ON THE SOCIAL AND ECONOMIC IMPACT OF “MIGHIB LA HULLUM” PROJECT



*Edited by Marco D'Agostini  
Comitato di Collegamento di Cattolici per una Civiltà dell'Amore  
November 2023*





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## ***Foreword***

The Mighib La Hullum project, designed in 2017 to respond to the serious water and food problems from which the rural areas of Ethiopia have been hit hard in recent years, especially due to the negative effects of climate change, which it caused growing drought, thus leading to the worsening of a situation of food insecurity, malnutrition and undernourishment, was selected by the donor, the Italian Presidency of the Council of Ministers, among the winning projects for the assignment of financing deriving from the 8 percent share of taxes directed for the year 2017 devolved to direct State management in 2018.

Its financing was formalized to the lead partner CEFA in 2019 and its execution began on 1<sup>st</sup> October 2020.

The Project has achieved many significant results - such as the creation of 4 Green Farms in the districts in the Diguna Fango, Kindo Koisha and Offa Districts and in the Agricultural Training Center of Ampo Koisha, in the Humbo District; training of 554 farmers of the districts of Diguna Fango, Kindo Koisha and Offa on modern Good Agriculture Practices; training of students from 15 schools in the mentioned districts and events involving 630 people on the topic of water and proper nutrition; training of 150 mothers, 50 for each of the above mentioned districts, on nutrition and the concrete preparation of dishes with traditional local Wolaita foods, whose sustainability and social and economic impact are analyzed in this Report.

Only the cohesion of the partners - the lead organization European Committee for Education and Agriculture - CEFA, the Ethiopian partner, the Wolaitta Development Association - WODA and the Liaison Committee of Catholics for a Civilization of Love - CCCA, and their common commitment for the social development of Wolaita have made it possible to achieve such significant results in the presence of a combination of unpredictable challenges such as the general instability in the Country related, as well as to the COVID epidemic and the crisis in Northern Ethiopia (which generated clashes and accidents in various regions), the high inflation rate that developed between the planning phase and the start-up phase of the project, and the situation of high local instability, linked to the dissolution process of the SNNPR region, the separation of some administrative Zones from the SNNPR region, which culminated in the birth of the South Ethiopia Regional State region and three other new regions over the last 4 years.

This is the consolidation of a common experience that originates from the first projects launched together in 2017 and evolved into a relationship of strong partnership and human bonds that go beyond the execution of the single project.

I wish therefore to thank CEFA Onlus, the leading NGO for the Project, for the commitment in coordinating the Project, the execution of the activities of direct competence and for the trust and support given to Liaison Committee of Catholics for a Civilization of Love - CCCA for carrying out the monitoring action, drafting the present Report and the other tasks entrusted to CCCA, such as consulting on the creation of irrigation systems powered by sola energy. I'm referring in particular to the Chairman of CEFA Board, Mr. Raoul Mosconi, the General Director of CEFA, Mrs. Alice Fanti, the CEFA East Africa Desk Coordinator, Mr. Dario De Nicola, the CEFA Ethiopia Programs

Coordinator, Ms. Eugenia Pacini, the Coordinator of CEFA Sodo Office, Mr. Ashenafi Mathewos, the field CEFA Coordinator for “Mighib La Hullum” Project, Mr. Mathewos Chafa, and Ms. Meskerem Mekiso, Mr. Tamru Elias and Mr. Wuletaw Girma, CEFA field agents for respectively Offa, Kindo Koisha and Duguna Fango Districts.

Moreover, I wish to express special thanks to the Wolaitta Development Association - WODA Director Chief Executive, Mr. Assefa Nana, the Program Manager Desalegn Berssamo and the Coordinator for WODA of the "Mighib La Hullum" Project, Mr. Gizachew Samuel for their commitment for the social development of Wolaita People and their support to the Project and to CCCA monitoring activities. Particular appreciation from all partners is due to Mr. Endrias Geta, Chairman of WODA's Management Board, for supporting the Project, to the Authorities of the Wolaita Zone and Duguna Fango, Kindo Koysa and Offa Districts Administrations, to the Regional Authorities and to the Ethiopian Federal Government, whose support was always present.

A special mention goes to Mr. Marco D'Agostini, who personally edited this Report for the Liaison Committee of Catholics for a Civilization of Love, in collaboration with our staff Ms. Emanuela Colombi, and to other members of CCCA who supported the Project.

Giuseppe Rotunno  
National Secretary  
Comitato di Collegamento di Cattolici per una Civiltà dell'Amore



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## SUMMARY

### **1. Introduction: objectives, subjects and programmes for Mighib La Hullum Project**

“Mighib La Hullum – Food for all – Green farms for food security and nutrition of rural families – Wolaita area – Ethiopia” Project (Case n. 128/2017) financed by the Presidency of the Council of Ministers - Distribution of the eight per thousand share of IRPEF directly managed by the State for the year 2017, has been promoted by 3 NGOs, 2 Italian partners – the European Committee for Education and Agriculture Onlus (CEFA) Onlus, Project leader, and the Comitato di Collegamento di Cattolici per una Civiltà dell’Amore (CCCA) - and one Ethiopian partner, the Wolaitta Development Association (WODA).

The Mighib La Hullum project was aimed at responding to the serious water and food crisis from which the rural area of Ethiopia, together with other African countries, has been hit hard in recent years, especially due to the negative effects of climate change, which caused drought, seasonal irregularities, floods that destroyed crops, thus leading to the worsening and chronicization of a situation of food insecurity, malnutrition and undernourishment.

The first result envisaged by the project was the creation of five green farms, one for each of the 5 Districts whose involvement in the project was initially envisaged: Boloso Bombe, Diguna Fango, Kindo Koisha, Kindo Didaye and Offa. Since the unpredictable difficulties - such as the general instability in the Country related, as well as to the COVID epidemic and the crisis in Northern Ethiopia (which generated clashes and accidents in various regions), the high inflation rate, equal to 26.84%, that developed between the planning phase and the start-up phase of the project, and the situation of high local instability, linked to the dissolution process of the SNNPR region, the separation of some administrative Zones from the SNNPR region, which culminated in the birth of the South Ethiopia Regional State region and three other new regions over the last 4 years - forced the project to be concentrated in the three of the five districts initially planned (Diguna Fango, Kindo Koisha and Offa) 4 Green Farms were finally created, one for each of the aforementioned Districts plus a fourth green farm in the Agricultural Training Center of Ampo Koisha in Humbo District.

The second result of the Project was the training of 554 farmers from the three districts of Diguna Fango, Kindo Koisha and Offa involved on improved agronomic techniques for cereals, vegetables and honey, irrigation techniques, seed production.

The third result was the raising awareness of children and young people from 15 schools in the 3 districts involved in the project on the theme of water and correct nutrition through the creation of recreational-pedagogical activities.

The fourth result was the strengthening of skills in the nutritional field and correct food preparation for a balanced diet of 150 mothers in the 3 above mentioned districts.

This Report is intended to locate useful elements for an evaluation of the real social and economic impact of Mighib La Hullum Project in the concerned area, not only for purposes related to the project itself, such as an evaluation of its efficiency, but also to contribute to the search for an intervention model we can offer to the local beneficiary communities.

### **2. The Wolaita Zone: general description and comparison with the general socioeconomic situation in Ethiopia**

Wolaita is the name of one among the 12 Zones which make up the South Ethiopia Regional State. It is named for the Welayta people, whose homeland is in the zone, a population of Omotic language, situated mostly between River Omo and Lake Abaya.

The South Ethiopia Regional State arose from the separation, between 2019 and 2023, of some Zones that made up the SNNPR Southern Nations, Nationalities, and Peoples' Region: the region dissolved when Sidama Region, Southwest Ethiopia Region, South Ethiopia Regional State and Central Ethiopia Regional State emerged independently.

The Wolaita Zone is divided in 16 districts (Woreda), and has about 2.1 million citizens, 51% women and 49% men. It's one of the country's most densely populated areas: 385 people per square kilometre. 48,10% of this population are kids 14 or less years old (national average is 43,71%), and 2,10% are old people 65 or more (national average is 2,91%). The population in conventional working age (15-64 years old) constitutes thus 49,77% of the population of Wolaita (dependency ratio 102.45%, data of 2015), the national average being 53,28% (dependency ratio 78% in 2015, 69% in 2022).

Poverty is decreasing in Ethiopia – thanks to a strong economic growth, which went from 2.4% in the Eighties to 8.2% in 2000 and 10.2% in 2015 – there remain still significant levels of absolute poverty. The percentage of Ethiopian citizens living under the national poverty line (which is to say, the purchasing power of the daily income is inferior to 1.25 dollars), according National data, between financial years 1995/1996 and 2011/2012 dropped from 45.5% to 27.8% and 23.15% in 2015 (according World Bank daily consumption less than US\$1.90 per person involves 30.8% of population).

Food security and malnutrition are a challenge for Ethiopia. A quarter of Ethiopian districts are classified as having a food and nutrition security crisis due to environmental disasters, more than 32% of the population suffers from malnutrition. According to a 2010 report, in Ethiopia 5.2 million people live in a precarious food security situation whose worsening is mainly attributable to the lack of rainfall in recent years during the forecast rainy seasons, which have weakened the food situation, already severely tested by the constant increase in food prices and the global financial crisis. Ethiopia ranks 174th out of 182 countries in the UNDP Human Development Index country ranking (2016).

The level of hunger in Ethiopia can also be measured based on the growth of children, recognized internationally as an important indicator of nutritional status and health in populations. In 2005, 20% of babies had low birth weight; 53.5% of children under five and 30.6% of pregnant women suffer from anemia. 34.6% of children are considered underweight, 50.7% of children suffer growth delays due to an inadequate diet and 12.3% suffer from severe malnutrition which causes a permanent loss of the immune system, making them very more frail and at risk of premature death.

According the State of Food Security and Nutrition in the World 2020, 84.0% of population cannot afford a healthy diet (which means a cost of US \$ 3.39 per day), 47.7% cannot afford a nutrient adequate diet (which means a cost of US \$ 1.94 per day) and 1.7% of population can neither afford an energy sufficient diet (which means a cost of US \$ 0.58 per day).

Throughout Ethiopia, rural poverty is a deep-rooted and widespread phenomenon and, in particular, in the Southern Nations, Nationalities and Peoples Region (SNNPR), where the project has been implemented, the incidence of poverty is equal to 29.6%, life expectancy is 58 years and the human development index is 0.462.

During the inspections and the interviews collected for Mighib La Hullum Project we were able to verify how the spread of malnutrition deriving from lack of food has worrying effects, like a strong occurrence of malformations in babies, due to the scarcity of food for women during pregnancy. In rural areas, for example, people don't even bother to look for a diet which makes up for the lack of animal proteins – unaffordable for the poorest farmers' families, many of which told us that they don't have meat more than once per year – by using vegetable proteins like legumes. The inability of the crops to satisfy basic food necessities of most of rural families doesn't only prevent income from selling products, which would allow to buy a reserve of food for droughts or periods without harvesting, but also prevents a process of diet diversification for these families.

Comparing the national economy with the economy of Wolaita, Ethiopia as a whole has a per-capita income of 470 dollars per year (about 1,700 dollars in terms of purchasing power), while in Wolaita the per-capita income is about 280 dollars.

The unemployment rate, which is 12% for the Wolaita Zone, that combines with a low employment rate, is anyway higher than the national unemployment rate, which is 5%.



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Though rural population is prevalent in Ethiopia, the percentage of urban population (usually characterised by less unemployment, higher per-capita income and a better access to services) in the Wolaita Zone is less than the national average, since it's only 15% against the national average of 19.4%.

The Wolaita Zone is predominantly rural in which approximately 85% of economic activity is represented by agriculture, mainly of a traditional type and characterized by a family/informal work organization and low productivity. The cases that practice more advanced techniques and better production are a marginal part of the reference population and are mostly cooperatives.

Climate change in the area is evident in the general increase in temperatures (in particular, increase in days and nights particularly hot) and by a change in the behavior of rainfall, the variability of which represents the factor that most affects the harvest and therefore the entire economic activity and nutrition of the population

The main crop in Wolaita, for consumption and sale on the market, is corn, which is alternated in the highlands with beans, in the midlands with wheat and barley, also sold on the market or consumed by farmers. Tubers are an important food source in the area, and represent the other main crops, specifically potatoes and the local ensete (false banana), cassava and taro

### **3. Districts involved in Mighib La Hullum Project**

Located in the Great Rift Valley, the Diguna Fango District, originated from the separation from Damot Weyde is situated at the eastern end of the Wolaita Zone and has a population of about 127,810 inhabitants, according the Ethiopian Statistical Service data of 2021, 49% men and 51% women (according to sources in 2021, 62,698 and 65,112, respectively), of which 51.1% is less than 15 years old and 2% is above 65 years old, therefore with an index of dependence of 113.2%, higher than the average of the Wolaita.

Kindo Koysha District, North-West of Soddo, originated from the separation from Kindo Didaye, and has a population of 142,242 inhabitants (69,376 men, 48,8% and 72,866 women, 51,2%), of which 50.1% is less than 15 years old and 1.6% is over 65 years old, therefore with a dependency rate of 109.6%, higher than the average in Wolaita.

The District of Offa, South-West of Soddo, has a population of 139,843 inhabitants (68,457, 49% and 71,386 women, 51%), of which 49.30% is less than 15 years old and 2.40% is older 65 years old and , therefore with an index of dependence of the 107%, higher than the average in Wolaita.

### **4. The activities carried out in framework of the Mighib La Hullum Project**

As regards Result 1, 4 Green farm were created in the three districts of Duguna Fango, Kindo Koisha and Offa and in the agricultural training center of Ampo Koisha in the Humbo district. The Ampo Koisha center is of crucial importance for the Wolaita area both because it has represented a qualified agricultural training structure for the entire area for 40 years and because it was one of the first demonstration drip irrigation systems installed in the area, with a strategic value as an example of a possible solution to address the problem of climate change which causes a growing problem for food security in the region and the country.

The related activities were: the elaboration and signature of specific memoranda of understanding and business plans for each green farm with local farmer communities and administrative authorities (A.1.1); the preparation of the necessary conditions to allow the production of cereals and vegetables with modern agronomic techniques, an objective to which the coordination of several activities such as agricultural training (A.2.1), the supply of inputs, the creation of demonstration crops and nurseries, the setting up of the products covered by the aforementioned business plans aimed at consolidating the global sustainability of the result (A.1.2); the elaboration of appropriate assessment on models for the integration of different agronomic and agroforestry techniques for the protection of the agricultural ecosystem, the control of soil erosion, the increase in fertility (A.1.3); the creation of nurseries for the production of seeds and seedlings, including grafted

ones, of tree, shrub and herbaceous species both for agriculture and for integrated agroforestry activities (A.1.4); the installation of demonstration irrigation systems powered by solar energy (A.1.5), as well as mobile irrigation solar pumps for small surfaces – in the districts of Duguna Fango, Kindo Koisha and Offa - suitable for family farms, as drip irrigation powered by solar panels (for Ampo Koisha Green Farm in the local Training Center). This constitutes a line of activity of fundamental importance given the problems arising from climate change, with practical demonstration of the techniques of using irrigation in the field.

As regards result 2 (To Train farmers from the involved districts on improved agronomic techniques for cereals, vegetables and honey, irrigation techniques, seed production) the training courses on GAP (Good Agriculture Practices) at district level aimed at local farmers were held by local trainers and dealt, in particular, with the following topics: rotation; sanitation of the field; composting and fertilization, weeding, mulching; intercropping; organic fertilization; creation and management of nurseries and seedlings; transplant; fertilizers and their application; main pests and diseases and their control; safe use of chemicals and fertilizers; record keeping, post-harvest, marketing and product valorisation methods; main aspects of water management, soil management and conservation. 2 training cycles were organized for each of the Districts of Diguna Fango, Kindo Koisha and Ofa; in each of the aforementioned districts, 6 groups of approximately 30 farmers were established, for each of which two training cycles were organised, divided into days of theoretical training and days of practical training, for a total of 30 training cycles carried out and 554 farmers trained.

As regards result 3 (To Raise awareness among children and young people of 15 schools in the involved districts on the topic of water and correct nutrition through the creation of recreational-pedagogical activities), a first activity (A.3.1) consisted of the creation of recreational-pedagogical workshops to raise awareness on the issues of water and correct nutrition in 15 schools of the 3 Districts (5 per district); A second activity (A.3.2) was the development of a guidance document containing the basic lines for the protection of water in arid and semi-arid contexts: finally, a third activity (A.3.3) was the creation of an awareness events in each district capital for World Water Day with school children and the collaboration of the Woredas involved.

As regards result 4 (To Strengthen the skills in nutrition and correct food preparation for a balanced diet of 150 mothers in the involved districts), a first activity (A.4.1) was the creation of a nutritional training workshop for 150 mothers from the 3 districts in order to pay specific attention to ensure a significant improvement in eating habits of families in rural communities. To materialize the theoretical part developed with activity A.4.1, a second activity carried out in the framework of Result 4 (A.4.2) was the creation of an intensive food preparation course for 3 groups of 50 mother for each District involved, for a total of 150 mothers. Finally, the third activity foreseen as part of Result 4 (A.4.3) was the development of a recipe book for a balanced diet using local products.

In the framework of the monitoring activity two visits took place in Wolaita by CCCA representative on 25-30 October 2021 and 20-26 November 2022, to collect data, pictures, videos and interviews to stakeholders belonging to all the 3 Districts concerned and to Ampo Koisha green farm. A series of meetings was also organized with CEFA and WODA field operators during the aforementioned missions as well as frequent online meetings on the objectives and tools of the monitoring activities, verification of possible critical issues in the management of the forms prepared to collect the data from part of the organizers of each activity (through reports and registers). With regard to the monitoring of the Project, a system has also been set up for the digital collection of interviews (using mobile phones, tablets or PCs).

## **5. The Social and Economic Impact of activities carried out in framework of the Mighib La Hullum Project**

From the data collected through interviews carried out in the field by CCCA, as well as, thanks to the aforementioned digital interview collection system (via mobile phones, PCs and tablets) it was possible to acquire a sufficiently large sample of responses to have a picture of the living conditions of the beneficiaries before the start of the project.

Around 100 beneficiaries (88) responded to the questionnaires prepared by CCCA, 56% women and 44% men. 84% percent of the interviewed beneficiaries belonged to families with 5 or



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more members, of which 60.2% with more than 6 members, 12.5% with 6 members and 12.5% with 5 members.

Almost all of the beneficiaries (97%) interviewed declared an annual income of less than 96,000 birr (equal to approximately 1,600 euros), of which 34.1 % an annual income of less than 30,000 birr (around 502 euros), lower than the absolute poverty income indicated by the United Nations. Most significantly, 80% of beneficiaries interviewed said their household suffers from food security issues, of which 62.5% said they do not have enough food for 1 to 4 months. per year and 15.9% do not have sufficient food for 5 to 8 months of the year.

As regards the women condition, also taken into consideration by the Project although it was not a specific object, from the sample interviews it emerged that women participate in agricultural work to an equivalent extent to that of men but are burdened by the burden of domestic work nevertheless, generally falling to husbands the role of head of the family (except in the case of families headed by a widowed woman).

As for Result 1, the target of creation of 5 Green Farms, despite the reduction from 5 to 3 of the districts involved in the project for the above mentioned unpredictable difficulties, was 80 percent satisfied as 4 Green Farms were created. Green Farms respond to the need to have a lasting demonstration tool. This demonstration function has a strategic value for the local communities involved because it impacts on a wide range of problems, among which the following are highlighted:

- a) the importance of rational use of water in irrigation to increase agricultural productivity in the presence of increasing drought due to climate change;
- b) the diffusion of a new technology such as the use of solar energy in a context in which, in addition to ecological considerations, there are added those inherent to the abandonment of the use of diesel pumps due to the costs of diesel fuel, which prove unaffordable for the majority of local farmers;
- c) the possibility of having a varied range of agricultural products, which allows the beneficiaries to respond to different needs such as nutrition, market access and environmental protection;
- d) the availability of an effective model for the organization of agricultural production;
- e) the availability of a simple but well-structured model for approaching the business;
- f) the availability of an easily replicable model both as a production structure and as a training tool.

We estimate a global indirect impact on one third of the approximately 20,000 inhabitants of the 4 villages involved - Fango Damot, in the Diguna Fango District, Borkoshe, in Kindo Koisha District, Woshi Wocha Dakaya, in Offa District, and Ampo Koisha, in Humbo District.

As for result 2, the training of farmers on agricultural techniques, despite the reduction in the number of districts involved in the project from 5 to 3, it is highlighted that the objective of training 500 farmers was achieved, training 554 of them, thanks to the increase in beneficiaries initially planned for each district.

Almost all the beneficiaries interviewed expressed a high degree of satisfaction with the training received (100%), recognized that the training contributed to the improvement of agricultural production capacity (100%) and income (100%) and recognized a positive impact on the food safety of the respective family unit (99%) and on the quality of nutritional standards (90%).

The farmers interviewed explained to us that the application to their family farms of the notions learned has allowed an improvement in the quality and quantity of their products, as well as their diversification, with consequent positive effects on the reduction of food shortages, on the quality of nutrition and income.

An exact quantification of these effects was not possible, given that after the conclusion of the training activities there were not yet sufficient harvest cycles to produce statistics, but some of the farmers involved have proudly shown us the results achieved in other portions of the fields by

applying learned techniques. Some more analytical quantitative data was instead offered to us by the analysis of the impact of the preparation and use of compost produced with natural materials as a replacement for chemical fertilizers traditionally purchased previously. This innovation resulted in savings between 1,200 (20 euros) and 5,500 (92 euros) birr per year, an amount which, given the low incomes of the rural population, meant for the majority of farmers involved a saving of between 5 and 10 percent on annual income, with peaks of 18% for the lowest incomes.

We estimate a global indirect impact to all of the approximately 30,000 inhabitants of the 6 villages involved - Fango Damot and Fango Sore, in the Diguna Fango District, Borkoshe and Sere Fenchawa, in Kindo Koisha District, Woshi Wocha Dakaya and Dakaya 01, in Offa District – and 7% of the approximately 400,000 inhabitants of the 3 Districts involved.

The recreational and pedagogical activities carried out in the schools in the framework of result 3 have evidently achieved the objective of comprehensive awareness-raising on the issue of water and correct nutrition, both because there was a massive participation of children and students – together with teachers, local authorities and local communities - and because of the feedback on the involvement in this initiative by farmers as parents testified by interviews. Those indications persuade us that the topic will continue to be developed as part of educational programs even after the conclusion of the Mighib La Hullum Project having verified that the educational activities carried out have already induced changes in the family behaviour of the families involved

As regards Result 4, the implementation of nutritional training workshops of an intensive food preparation course for 150 mothers from the districts involved, the close correlation with results 1 (the Green farms) and 2 (the training on agricultural techniques). We underline as the problems of malnutrition and undernourishment found in the rural areas of Wolaita are linked to access to food no less than to correct and comprehensive training and information on a balanced diet for adult health and growth of children. Given a direct impact on the mothers' families, for a number of approximately 750 beneficiaries, a positive cascade indirect impact can be estimated on at least 1,500 families and approximately 7,500, equal to approximately 2% of the population of the districts involved.

In conclusion, it is believed that the data presented offer a measure of the value of the Mighib La Hullum Project together with the final consideration of the importance of the evolution of such international cooperation relations from a project logic to a more systematic partnership logic. Such an evolution should be required both in order to be able to have, over time, of increasingly analytical data series on the effects of the projects on the actual change in the living conditions of the beneficiary populations, both, above all, in order to enhance those human relationships that have been created over the months and years and which, as reported by the beneficiaries and local partners during the activities carried out together, beyond the material results of the specific project, constitute ones of the deepest heritage of these experiences.



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## 1. Introduction

### *1.1. Objectives and programmes of Mighib La Hullum Project*

“Mighib La Hullum – Food for all – Green farms for food security and nutrition of rural families – Wolaita area – Ethiopia” Project (Case n. 128/2017) financed by the Presidency of the Council of Ministers - Distribution of the eight per thousand share of IRPEF directly managed by the State for the year 2017, has been promoted by 2 Italian partners (CEFA Onlus, Project leader and CCCA - Comitato di Collegamento di Cattolici per una Civiltà dell'Amore) and an Ethiopian partner, WODA - Wolaitta Development Association.

The Mighib La Hullum project was aimed at responding to the serious water and food crisis from which the rural area of Ethiopia, together with other African countries, has been hit hard in recent years, especially due to the negative effects of climate change, which it caused drought, seasonal irregularities, floods that destroyed crops, thus leading to the worsening and chronicization of a situation of food insecurity, malnutrition and undernourishment. The proposed activities, while dealing with an emergency and urgent situation made necessary by the food crisis that has hit the area and which forces the government to intervene with emergency supplies of food and water, adapt to the general vision that aims to improve the living conditions of rural families through constant training and empowerment of small producers and farmers. We worked on issues that have as their starting point the respect and correct use of natural resources and production in harmony with the environment, in order to guarantee correct nutrition, which reduces the high rate of undernourishment and malnutrition in the region.

The project was also aimed at a defined number of beneficiaries, however, indirectly, it aimed to reach a much higher percentage of the population: the multiplier effect will be achieved through the dissemination of information among the families of the project communities, among the school teachers and among the families of the students who received the training, thanks to permanent training on the farm and the publication of a study on food safety carried out in the districts covered by the intervention.

The General Objective of the Project was to contribute to mitigating the indices of undernutrition and malnutrition and increase the food security and sovereignty of the population of the rural areas of the Wolaita. The specific objective was to increase the quantity and quality of agricultural products intended for food consumption by peasant families, with particular attention to children, in some districts of Wolaita.

The initial aim was to carry out the project in 5 districts of the Wolaita Zone characterized by a generalized condition of social hardship in rural communities, which constitute 80 percent of the population: Boloso Bombe, Diguna Fango, Kindo Koisha, Kindo Didaye and Offa. However, the general instability in the Country related, as well as to the COVID epidemic and the crisis in Northern Ethiopia (the conflict in Tigray Region which generated clashes and accidents in various regions), the high inflation rate, from 26.84% to 35%, that developed between the planning phase and the start-up phase of the project, and the situation of high local instability - linked to the separation of some administrative areas from the SNNPR region, with unrest that culminated, in June 2019, in the fire of some properties of the local partner WODA, as well as the separation, in June 2020, of the Sidama Zone from the SNNPR region, the subsequent separation from the same region, in November 2021, of the western area, which also constituted a new autonomous region, and the continuation of the process of dismemberment of the SNNPR region in the last months of project activity with the further separation, still underway, between the remaining areas of the center and of the southern part of the SNNPR – led the Ethiopian partner WODA and the local authorities to recommend concentrating the project only in the Districts of Diguna Fango, Kindo Koisha and Offa.

Despite these difficulties, in order not to alter the substantial results expected in the Project, a corresponding (and, in some cases, higher) number of beneficiaries than those initially expected was involved.

Furthermore, the operational limitations imposed in various phases of the COVID emergency, as well as the repeated emergencies for the political and social situation in the country, mainly in the North but also, as highlighted above, in the SNNPR region where the Project takes place, with frequent invitations of the Italian Ministry of Foreign Affairs and International Cooperation to compatriots and NGOs to travel to the capital for security reasons, have led to delays in the implementation of the planned activities and the consequent need for a remodulation of the timetable, for which it was authorized by the donor an 8-month extension of the project, which was supposed to end on 30 September 2022 and instead ended on 31 May 2023.

The project purpose was to intervene in a systemic manner on the issues of food security and sovereignty of families in the rural area, improving their quality of life and reducing the indices of poverty, undernourishment and malnutrition. The enormous population density and the extreme fragmentation of the agricultural land available to each family, problems that characterize Wolaita, make detailed work with the individual families extremely complex and onerous.

In order to maximize impact, sustainability and replicability, the action was based on the FFS - Farmer Field School training approach, developed by FAO over 25 years ago as an alternative to the top-down extension method. To overcome the high levels of malnutrition, caused by low agricultural productivity in a highly overpopulated area, the project intended to improve the levels of training, both theoretical and above all in the field, of farmers and small producers, increase availability on the market for quality and low-priced agricultural inputs, stimulate the production of native and more nutritious vegetables and cereals, encourage the use of agricultural practices with a lower environmental impact, suitable for a country increasingly affected by drought and famine.

The first result envisaged by the project (“R.1: *5 experimental green farms intended for production, field training, demonstration of low environmental impact techniques, generation of quality agricultural inputs and affordable prices created in the Districts of Boloso Bombe, Diguna Fango, Kindo Didaye, Kindo Koysha and Offa*”) was the creation of five green farms, one for each of the 5 Districts whose involvement in the project was initially envisaged: Boloso Bombe, Diguna Fango, Kindo Koisha, Kindo Didaye and Offa. Since the difficulties illustrated above forced the project to be concentrated in the three districts of Diguna Fango, Kindo Koisha and Offa, 4 Green Farms were finally created, one for each of the aforementioned Districts plus a fourth green farm in the Agricultural Training Center of Ampo Koisha in Humbo District. The Ampo Koisha training center has a crucial importance for the Wolaita Zone because it has been a qualified training center for 40 years and because it used to be one of the first drip irrigation system for demonstration purpose installed in the zone with a strategic value as an example of possible solution for facing the challenge



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of climate change which causes increase of the problem of food insecurity in the region and in the Country.

The experimental green farms aim to represent a district center for technical training, extension of basic agricultural services, production of improved seeds, demonstration of the use of basic technologies in the field such as solar energy for irrigation, that farmers can then replicate on their own land without the need for huge investments. Furthermore, the farms would be a field school always open for the beneficiaries who, in addition to having attended the training courses and practical workshops organized by the project, will be able to continuously benefit from the farm's services and deliver agricultural products (seeds, wheat, vegetables) for a first transformation. This will guarantee an immediate increase in the production and productivity of family fields, improve the quality of agricultural products available on the market and intended for family self-consumption and will contribute to the fight against malnutrition in the intervention area. Part of the land included in the farms will be used as experimental fields on which new types of agricultural products will be grown, improved species that are more resistant to parasites and diseases, innovative cultivation techniques will be tested, in order to train farmers, show the different yields agricultural, but also produce goods for the local market, in order to guarantee the economic sustainability of the farms themselves.

The second result of the Project (*"R. 2: 500 farmers from the 5 districts trained on: improved agronomic techniques for cereals, vegetables and honey, irrigation techniques, seed production"*) was the training of 500 farmers from the districts involved on: improved agronomic techniques for cereals, vegetables and honey, irrigation techniques, seed production. Because of the reduction of the number of Districts involved from 5 to 3, for the above mentioned difficulties, the number of beneficiaries planned for each district has been increased in order to achieve the total of 500 beneficiaries.

Since food safety and correct nutrition are issues of particular importance for rural families, it was decided to also intervene in some local schools as it is considered of fundamental importance to deal with these issues with children and young people who were the protagonists of the actions accomplished. The third result (*"R. 3: Raising awareness among children and young people in 10 schools in the 5 districts on the topic of water and correct nutrition through the creation of recreational-pedagogical activities"*) was therefore the raising awareness of children and young people from a number of schools in the districts involved in the project on the theme of water and correct nutrition through the creation of recreational-pedagogical activities. Because of the reduction of the number of Districts involved from 5 to 3, the planned number of schools to be involved for each district has been increased from 2 to 3 in order to achieve the total of 15 schools involved.

Furthermore, a specific line of actions was intended for mothers, fundamental figures both in agricultural activities and in the education and management of family and domestic activities. We worked with them on the issues of correct nutrition, the production of healthy foods, their conservation and the preparation of foods according to techniques suitable for not alternating their nutritional properties and with the use of local products. The fourth result (*"R. 4: Skills in nutrition and correct food preparation for a balanced diet of 150 mothers in the 5 districts strengthened"*) was therefore the strengthening of skills in the nutritional field and organizing workshops on correct food preparation for a balanced diet of 150 mothers in the districts involved. Because of the reduction of the number of Districts involved from 5 to 3, the planned number of mothers to be involved for each district has been increased from 30 to 50 in order to achieve the total of 150 mothers involved.

## ***1.2. Partners of Mighib La Hullum Project***

The partners involved in Mighib La Hullum Project were CEFA European Committee for Education and Agriculture Onlus, leader of the project, WODA - Wolaita Development Association, the Ethiopian partner, and CCCA - Comitato di Collegamento di Cattolici per una Civiltà dell'Amore.

CEFA Onlus is an NGO, based mainly in Bologna (Italy), with 50 years of experience in projects about rural development, energy and green-economy products in Africa, Latin America and in the Balkans. CEFA Onlus is the general coordinator of Mighib La Hullum Project, and is directly responsible for carrying out technical training in agriculture and implementation of green farms equipped with irrigation systems powered by solar energy; it also oversees the actions of other partners.

WODA is a great Ethiopian NGO based on the local community, with a strong presence in the Wolaita area, with more than 600,000 members. From more than 20 years it's deeply involved in social projects and in rural development programs. Regarding the Project, WODA has constituted the reference point for many activities to realise on site, from authorisations to the logistics for training actions, to the selection of trainers and trainee and specific training for farmers on the preparation and management of nurseries, awareness-raising actions in schools for young people and children on the topic of water and correct nutrition through the creation of recreational-pedagogical activities, as well as training for mothers on strengthening skills in the field of nutrition and correct preparation of food for a balanced diet. WODA was also entrusted with the supervision, once the project was completed, of the green farms, guaranteeing their technical and institutional sustainability.

The Comitato di Collegamento di Cattolici per una Civiltà dell'Amore (CCCA) is a non-profit association, with legal seat in Rome (Italy), with 30 years of experience in micro-projects which involve micro-businesses in developing countries. In the framework of Mighib La Hullum Project CCCA has been responsible for activities of monitoring and evaluation of Project's social and economical impact, including the realisation of the present Report. Furthermore, CCCA has provided consultancy and support to the CEFA lead partner on the creation of irrigation systems powered by solar energy and consultancy and support to CEFA and WODA on drawing of business plans and Memorandum of understanding ruling the green farms established by the project.

## ***1.3. Objectives and method of the Report on the Social and Economic Impact of Mighib La Hullum Project***

This Report is intended to locate useful elements for an evaluation of the real social and economic impact of Mighib La Hullum Project in the concerned area, not only for purposes related to the project itself, such as an evaluation of its efficiency, but also to contribute to the search for an intervention model we can offer to the local beneficiary communities. Furthermore, it could be useful for the operators of the cooperation, who could consider to replicate similar experience, if to be considered successful, in other areas.

The target of the social and economic impact monitoring which was carried out in the framework of the preparation of the present Report, has been to create an increasingly accurate description of the socioeconomic situation of the influenced area, supervise the interventions carried out, acquire information and means of evaluation about those several actions and verify their possible impact on people involved and the whole territory concerned.

So far as concerns the description of the socioeconomic situation of the Wolaita Zone and the involved Districts, Diguna Fango, Kindo Didaye, Kindo Koysya and Offa, we opted to start from a comparison between social and economic indicators in Wolaita Zone and in the Federal Democratic Republic of Ethiopia.

Monitoring of Project actions was not limited to gathering organisational and statistical information; it also included taking pictures and interviews with the subjects involved, both operators and instructors, trainers and trainees, farmers, district and village officials, cooperative managers and



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members and other operators, as well as videos of the relevant sites in order to support designing of irrigation systems powered by solar energy to be installed for the benefit of the green farms envisaged by the project.

The analysis of the impact on the territory has been the biggest challenge, because the project was scheduled to take place during a relatively short time (24 months, later extended to 8 more months) and it has been difficult to collect statistical data on specific effects on the harvest, as well as on social, economic and material effects, such as a decrease in indices of malnutrition and undernutrition. Still, the objective was to detect at least some spurs of this impact through random analysis, interviews and specific checks in the area, by using the indicators of the project as well.

In the framework of the above mentioned monitoring activity two visits took place in Wolaita by CCCA representative on October 2021 and November 2022, to collect data, pictures, videos and interviews to stakeholders belonging to all the 3 Districts concerned. A series of meetings was also organized with CEFA and WODA field operators during the aforementioned missions as well as frequent online meetings on the objectives and tools of the monitoring activities, verification of possible critical issues in the management of the forms prepared to collect the data from part of the organizers of each activity (through reports and registers).

During the aforementioned missions, visits were also carried out to suppliers in Addis Ababa to acquire information on prices and technical characteristics of fixed and mobile pumps, photovoltaic panels, irrigation systems, inverters, accumulators and other devices available on the Ethiopian market for the construction and maintenance of irrigation systems powered by solar energy.

With regard to the monitoring of the Project, a system has also been set up for the digital collection of interviews (using mobile phones, tablets or PCs) also by the partner operators on the living conditions and the degree of interest and satisfaction of the beneficiaries which, combined with the results of the interviews collected by CCCA during the missions, made it possible to have a very useful statistical case study in view of the Final Report on the social and economic impact of the Project

## 2. *The Wolaita Zone: general description and comparison with the general socioeconomic situation in Ethiopia*<sup>1</sup>

### *2.1. The Wolaita Zone: general description*

Wolaita is the name of one among the 12 Zones which make up the South Ethiopia Regional State. It is named for the Welayta people, whose homeland is in the zone, a population of Omotic language, situated mostly between River Omo and Lake Abaya.

The South Ethiopia Regional State arose from the separation, between 2019 and 2023, of some Zones that made up the SNNPR Southern Nations, Nationalities, and Peoples' Region: the region dissolved when Sidama Region, Southwest Ethiopia Region, South Ethiopia Regional State and Central Ethiopia Regional State emerged independently.

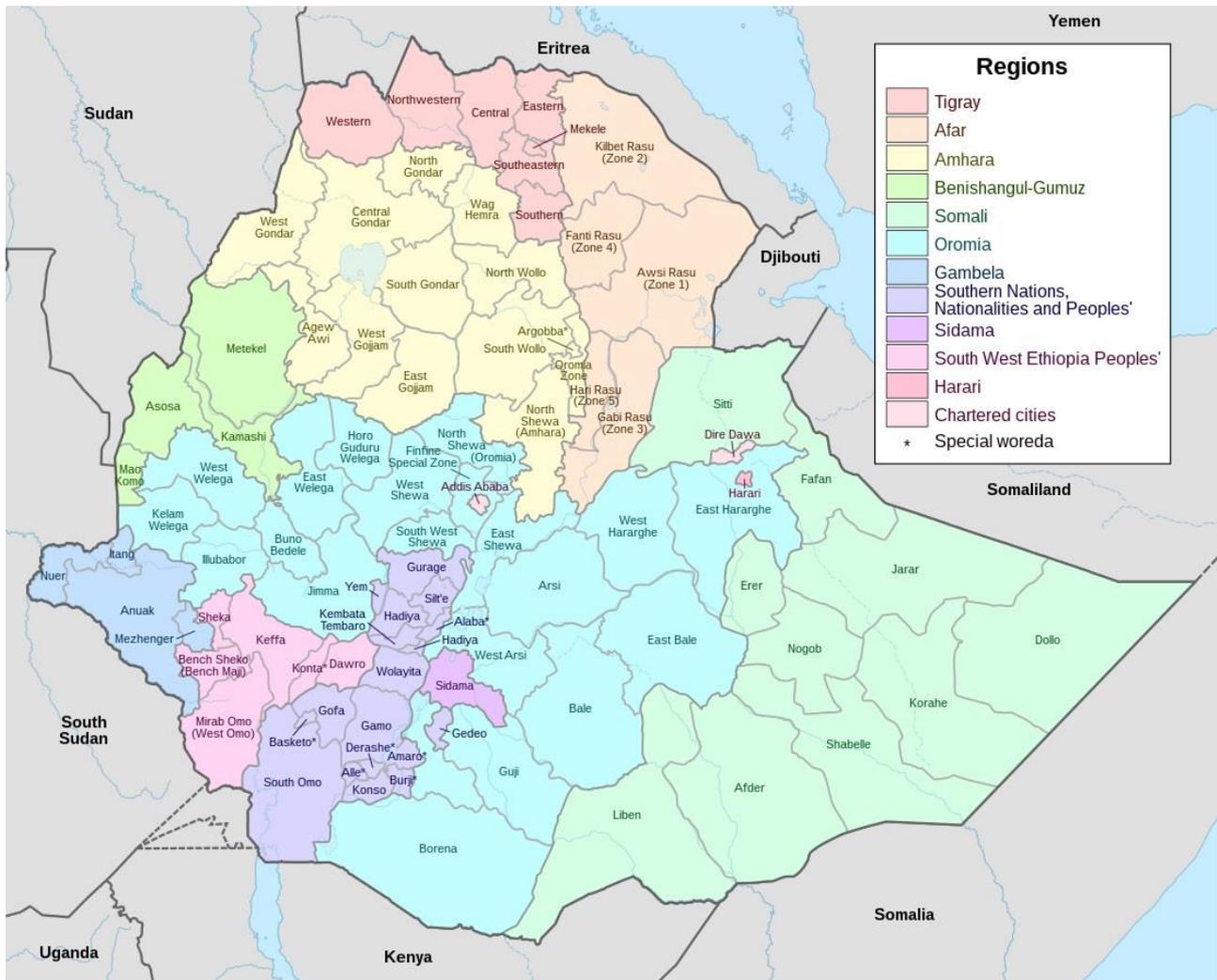


**Fig. 1. Wolaita zone location in SNNP Region of Ethiopia**  
(Creative Commons Attribution-Share Alike 4.0 International Author Ue3lman)

The Wolaita Zone is about 330 km southwest of Addis Ababa; it borders the Gamo Gofa Area to the South, the Dawro Zone to the West, the Sidama Region to the East as well as the Kamabata-Tamabro and Hadiya Zones and the Oromia Region to the Northeast.

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<sup>1</sup>Statistical data on the Wolaita Zone were elaborated by WODA, and refer to submissions by Economic and Rural Development Department of the Wolaita Zone administration and other databases



**Fig. 2. Map of the regions and zones of Ethiopia**

(Creative Commons Attribution-Share Alike 4.0 International Created from [File:Ethiopia adm location map.svg](https://commons.wikimedia.org/wiki/File:Ethiopia_admin_location_map.svg) by User:NordNordWest )

Topography presents rolling mountains, hills, plateaus and plains which extend from the highest point of Mount Damota (2,950 meters asl) to the low altitude of Lake Abaya and the valley of River Omo (501 meters asl). About 40 rivers in the area reach a total length of 53 km.

The capital city Soddo is about 1,600 meters asl. Citizens are used to refer to the various internal areas as highland (Dega, about 9% of the territory), midland (Weinadega, 56% of the territory) and lowland (Kolla, 35% of the territory).

Climate in Ethiopia is temperate on the plateau and hot on the plains. In Addis Ababa, which asl goes from 2,200 to 2,600 m, the highest temperature is 26° C and the minimum is 4° C. The weather is usually sunny and dry, but short rain (*belg*) happen from February to April and heavy rain (*meher*) happen from half of June to half of September. The weather varies remarkably according to the region and the characteristics of the area.

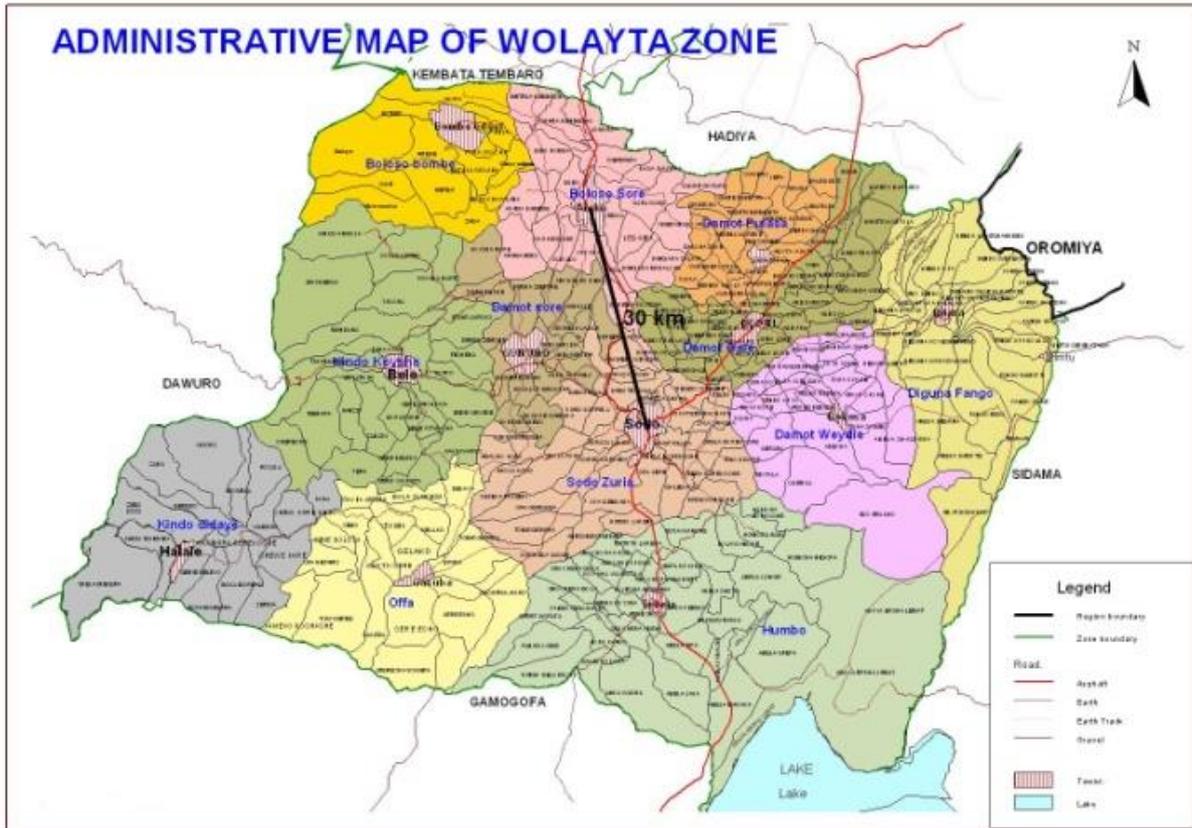


Fig. 3. Administrative Map of Wolaita Zone

The weather in Wolaita is stable, and temperature variations range from a minimum of 15.1°C to a maximum of 31°C. The hot, dry and temperate climate is generally very enjoyable. The year is divided in two seasons: the so-called “wet” season (*balguwa*), from June to October, and the dry season (*boniya*) from October to June, split in February by a short period of so-called “small rain” (*baddessa*). However, climate change is causing a progressive modification of the traditional rainfall seasons in southern Ethiopia: in the “Belg” period (February - April) the rains are becoming increasingly thinner while, in the “Meher” period (June - September), they are becoming increasingly more frequently the character of torrential rainfall. The heaviest rains fall between July and September and range from 800 to 1,600 mm (in the Po Valley, in Italy, the average annual rain ranges from 700 and 1,200 mm depending on the area). The dry season is characterised by a strong wind that blows from the East, which clears the sky and makes it blue during the day, with the occasional cloud and full of stars at night – a lot more than in Europe. Violent storms can happen during periods of heavy rain, while every morning, during the rainy season, the mist appears in the valleys and evaporates during the first hours of the day. In both seasons there can be both hailstorms, which destroy crops, and tornadoes, which bring down trees.

The Wolaita Zone is divided in 16 districts (*Woreda*), and has about 2.1 million citizens, 51% women and 49% men<sup>2</sup>. It’s one of the country’s most densely populated areas: 385 people per square kilometre, with peaks of 781 p/km<sup>2</sup>, the national average being 90 p/km<sup>2</sup>.

The Wolaita Zone is inhabited by two main ethnic groups, to which the 110 clans in the area belong (2003 data): the Dogela, who are the vast majority, and the Mala.

47,53% of this population are kids 14 or less years old (national average is 43,71%), 19,31% are young adults from 15 to 25 (national average is 20,04%), 31,28% are adults from 26 to 64 (national average is 33,34%) and 2,10% are old people 65 or more (national average is 2,91%). The population

<sup>2</sup> Ethiopian Statistical Service data of 2021:

<https://www.statsethiopia.gov.et/wp-content/uploads/2020/08/Population-of-Weredas-as-of-July-2021.pdf>

in conventional working age (15-64 years old) constitutes thus 49,77%<sup>3</sup> of the population of Wolaita, the national average being 53,28%.

Since Ethiopia, with 102.9 million citizens, is the most populated country in the continent, after Nigeria, it is one of the less urbanised African countries (19%, the average for sub-Saharan Africa being 37%). The percentage of urbanisation in Wolaita is lower yet, ranging between 14.5 and 15% according to available sources: this last datum allows us to recognise the importance of the rural countryside under a demographic point of view as well, since 85% of the population lives in such areas.

## 2.2. Economic situation and Food Security

The main goal of the development strategy chosen by Ethiopia's Federal Government, with its first year of growth and transformation (Growth and Transformation Plan - GTP I, active 2011-2015), was to promote an inclusive growth through massive investments in public infrastructures. In particular, the strategy called "Ethiopia's Climate-Resilient and Green Economy (CRGE)", used during GTP I, focused on the need to stop agro ecological degradation, which threatens millions of poor citizens in the countryside. CRGE concentrated on four key areas: improving farming and breeding practices in order to get better food safety and income for the farmers, reducing emissions; protect and restore forests for their contribute to economy and the ecosystem, improving energy production from renewable sources for national and regional markets; make a jump towards more modern and energy-efficient technologies in transports, manufacturing and construction.



**The headquarters of the African Union in Addis Ababa**

*(M. D'Agostini)*

Though Ethiopian economy achieved some of the objectives of Millennium Goals<sup>4</sup>, there are still challenges to be won and opportunities to seize.

Poverty is indeed decreasing in Ethiopia – thanks to a strong economic growth, which went from 2.4% in the Eighties to 8.2% in 2000 and 10.2% in 2015 – there remain still significant levels of absolute poverty. The percentage of Ethiopian citizens living under the national poverty line (which is to say, the purchasing power of the daily income is inferior to 1.25 dollars), according National data, between financial years 1995/1996 and 2011/2012 dropped from 45.5% to 27.8%<sup>5</sup> and 23.15% in 2015 (according World Bank daily consumption less than US\$1.90 per person involves 30.8% of

<sup>3</sup> Data 2015

<sup>4</sup>Ref. UNDP, 2014 MDG Report – Ethiopia, in <http://www.et.undp.org/content/ethiopia/en/home/library/mdg/EthiopiaMDG2014.html>

<sup>5</sup>Ministry of Finance and Economic Development Federal Democratic Republic of Ethiopia and United Nations Country Team Ethiopia, Assessing Progress Towards The Millenium Development Goals, Ethiopia MDGs Report 2012, Addis Ababa, 2012

population<sup>6</sup>) but remains quite high, with significant differences between urban and rural areas (25.7 vs 30.4%)<sup>7</sup>.



**A traditional house in a rural environment of Wolaita (left) undergoing progressive replacement with more modern houses (right), with metal roofing and sometimes plastered but characterized by the use of the same natural materials (wooden frame covered with earth covering) for the construction of the walls**

*(M. D'Agostini)*

Food security and malnutrition are a challenge for Ethiopia. A quarter of Ethiopian districts are classified as having a food and nutrition security crisis due to environmental disasters, more than 32% of the population suffers from malnutrition. According to a 2010 report, in Ethiopia 5.2 million people live in a precarious food security situation whose worsening is mainly attributable to the lack of rainfall in recent years during the forecast rainy seasons, which have weakened the food situation, already severely tested by the constant increase in food prices and the global financial crisis. Ethiopia ranks 174th out of 182 countries in the UNDP Human Development Index country ranking (2016).

The level of hunger in Ethiopia can also be measured based on the growth of children, recognized internationally as an important indicator of nutritional status and health in populations. In 2005, 20% of babies had low birth weight; 53.5% of children under five and 30.6% of pregnant women suffer from anemia. 34.6% of children are considered underweight, 50.7% of children suffer growth delays due to an inadequate diet and 12.3% suffer from severe malnutrition which causes a permanent loss of the immune system, making them very more frail and at risk of premature death. High infant mortality, their immune system damaged by an inadequate diet, delays in mental development, negative effects on intellectual capacity and the consequent reduction in school performance have long-term effects not only on children but on the entire community, on economic productivity as a whole.

According the State of Food Security and Nutrition in the World 2020<sup>8</sup>, 84.0% of population cannot afford a healthy diet (which means a cost of US \$ 3.39 per day), 47.7% cannot afford a nutrient adequate diet (which means a cost of US \$ 1.94 per day) and 1.7% of population can neither afford an energy sufficient diet (which means a cost of US \$ 0.58 per day). Moreover, according the same Report<sup>9</sup>, in 2021 the number of undernourished people in Ethiopia has reached 28.6 millions (24.9% of total population), the number of severely food insecure people has reached 22.6 millions (19.6% of total population) and, in 2020, the number of children (under 5 years of age) affected by wasting were 1.2 millions (7.2%) and the number of children (under 5 years of age) who were stunted has reached 5.9 millions (35.3%).

<sup>6</sup> World Bank, Poverty & Equity Brief,

[https://databankfiles.worldbank.org/public/ddpext\\_download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global\\_POVEQ\\_ETH.pdf](https://databankfiles.worldbank.org/public/ddpext_download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global_POVEQ_ETH.pdf)

<sup>7</sup> Adamnesh Atnafu, Linda Oucho and Benjamin Zeitlyn, Poverty, Youth and Rural-Urban Migration in Ethiopia, Migrating out of Poverty – Research Programme Consortium, Working Paper 17, July 2014, p. 8.

<sup>8</sup> The State of Food Security and Nutrition in the World 2020, page 87, <https://sdgs.un.org/sites/default/files/publications/2704FAOpublication.pdf>

<sup>9</sup> The State of Food Security and Nutrition in the World 2020, page 150, <https://www.fao.org/documents/card/en?details=cc0639en>



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Throughout Ethiopia, rural poverty is a deep-rooted and widespread phenomenon and, in particular, in the Southern Nations, Nationalities and Peoples Region (SNNPR), where the project has been implemented, the incidence of poverty is equal to 29.6%, life expectancy is 58 years and the human development index is 0.462.

Migration is a further problem affecting Ethiopia: the net emigration rate in Ethiopia (UNICEF 2015) is 0.22 migrants/1000 inhabitants; in 2013 there were approximately 718,000 Ethiopian migrants (165,000 of whom were under the age of 15). Italy is among the top destination nations, with 31,547 migrants in 2013.

Among the obstacles to adequate nutrition, in addition to the precarious living conditions of families, there are the lack of job opportunities, gender inequality, the lack of family planning programs, the scarcity of drinking water, the lack of health, which is reflected in the unproductivity of crops. In this general context, agriculture has a strategic importance in the generation of wealth and in the use of natural resources depleted due to a high and non-eco-sustainable use of the same, already scarce in themselves - in particularly water ones - in an area heavily affected by drought.

During the inspections and the interviews collected for Mighib La Hullum Project we were able to verify how the spread of malnutrition deriving from lack of food has worrying effects, like a strong occurrence of malformations in babies, due to the scarcity of food for women during pregnancy. In rural areas, for example, people don't even bother to look for a diet which makes up for the lack of animal proteins – unaffordable for the poorest farmers' families, many of which told us that they don't have meat more than once per year – by using vegetable proteins like legumes. The inability of the crops to satisfy basic food necessities of most of rural families doesn't only prevent income from selling products, which would allow to buy a reserve of food for droughts or periods without harvesting, but also prevents a process of diet diversification for these families, which prefer traditional crops, whose yield they know, rather than risking by trying different crops.

The main challenge is thus to promote a development which generates an economic growth, which can decrease significantly the high levels of poverty, particularly in the countryside. Though poverty levels in the country have gone down remarkably, about 23 million citizens still live under the poverty line for various reasons, such as production and productivity of the agricultural sector, scarce availability of internal resources, the high level of unemployment, especially among young people, inadequate quality and distribution of basic social services, low access to credit instruments for the people and general conditions quite adverse to private business. In spite of these challenges, Ethiopia has favourable economic opportunities and chances. The country is rich in natural resources, has a low-cost workforce which can be further specifically trained, an emerging middle class and a political leadership, and this is confirmed by African Development Bank, strongly involved in the development of the country<sup>10</sup>.

At an institutional level, there are government support programs and policies specifically aimed at increasing production and productivity, towards which the project will take a complementary perspective. Since 2002, the Ethiopian government has developed the Agricultural Extension Workers system, which provides for the presence in every kebele (village) of operators to support farmers on the issues of cultivation, water management and cooperative organization. Furthermore, since 2016, the government has implemented the "integrated agro-industrial park" strategy, which represents an industrial strategy of coordination and collaboration between private companies, based on

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<sup>10</sup>Ref. African Development Bank Group, Federal Democratic Republic Of Ethiopia Country Strategy Paper 2016-2020, 2016, in [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/ETHIOPIA\\_CSP\\_BPPS\\_EN.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/ETHIOPIA_CSP_BPPS_EN.pdf)

geographical proximity and aimed at sharing infrastructure, technology and services, knowledge, and good practices. The agropark model is within the Program for Country Partnership of the United Nations Industrial Development Organization (UNIDO). In the Wolaita area, the local counterpart WODA (Wolaita Development Association), CEFA's partner in other projects in the area since 2016, is one of the main actors involved in the implementation of the strategy.

The middle-term development plan, GTP II<sup>11</sup>, planned by the Government for 2016-2020, is aimed to transform Ethiopia in a middle-income industrialised country within 2025. This transformation will be promoted following three main objectives: a) maintain an average growth in real GDP of at least 11%; b) enforce aggressive measures aimed for a quick industrialisation and structural transformation; c) guarantee a sustainable growth by promoting a stable macro-economic plan and a green economy which can stand the climate. The country is also trying to integrate sustainable development goals (SDG) in GTP II. In order to achieve the objective of becoming a middle-income country within 2025, strong investments will be necessary to transform agriculture, for energy, transportation and a better access to quality basic services. Development in the agro-industrial sector will have to be accelerated, and the role of the private sector in all economic fields has to be broadened. GTP II has among its objectives to achieve food safety.

A useful economic indicator may also be represented by the families' access to energy sources. In particular, the great difference between urban and rural areas can also reflect the situation in Wolaita, which is mainly countryside: 88.5% of families living in major urban settlements and 80.4% of families living in smaller urban settlements have access to electricity (that fails at least 4 times a week for at least 40% of families), while only 10.1% of families living in rural areas have. In such areas, only 16.45% of families have access to photovoltaic sources, while for 70% of families the only sources of energy are electric batteries, kerosene lamps and wood<sup>12</sup>. Wood in particular constitutes the main fuel for cooking for 73.65% of families, with devastating effects on deforestation and soil erosion.

Comparing the national economy with the economy of Wolaita, Ethiopia as a whole has a per-capita income of 470 dollars per year (about 1,700 dollars in terms of purchasing power), while in Wolaita the per-capita income is about 280 dollars.

The unemployment rate, which is 12% for the Wolaita Zone, that combines with a low employment rate, is anyway higher than the national unemployment rate, which is 5%.

Though rural population is prevalent in Ethiopia, the percentage of urban population (usually characterised by less unemployment, higher per-capita income and a better access to services) in the Wolaita Zone is less than the national average, since it's only 15% against the national average of 19.4%.

Regarding the population in age of dependency (which is, less than 15 and more than 64 years old) there is a striking difference between the Wolaita Zone, with a percentage of 50.3% of the population (dependency ratio 102.45% in 2015) while the national ratio is 44.9% (dependency ratio 78% in 2015, 69% in 2022<sup>13</sup>).

Regarding tourism in Wolaita, there are about 4,500 registered presences a year.

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<sup>11</sup>Objectives of GTP II:

1. Support a quick, spread and fair growth;
2. Improve quality, productivity and competitiveness of the manufacturing sectors;
3. Transform national private investors in a strong development force;
4. Fill the gap in infrastructural services by developing abilities in national construction industry;
5. Manage urbanisation;
6. Accelerate human development and technological innovation;
7. Improve democracy and good governance through development of executive abilities of PA and encouraging the participation of the public;
8. Promote emancipation and bestowal of responsibility to women and young people;
9. Build a green economy that can stand the climate.

<sup>12</sup>Ref. Central Statistical Agency of Ethiopia and Living Standards Measurement Study (LSMS), World Bank, "LSMS—Integrated Surveys on Agriculture Ethiopia Socioeconomic Survey (ESS) - 2015/2016", 2017

<sup>13</sup> <https://data.worldbank.org/indicator/SP.POP.DPND.YG?locations=ET>



**National road from Addis Ababa to Soddo**  
(M. D'Agostini)

It should be noticed that roads between villages may be quite rough (though there are a lot of constructions sites to lay down the road surface), and this is the reason why the car industry struggles to develop; only off-road vehicles can be used, and they're too expensive for private citizens and usually limited to public institutions, businesses and local and international NGOs.

Infrastructures could use huge improvements, as nowadays there are neither railways (a branch of the Addis Ababa-Djibuti main line should be built in the future, and it should cross the region going south) nor highways, while there are in Wolaita about 115 km of paved roads (essentially national and regional roads crossing the territory, plus the roads between Soddo and the district seats) and 1,300 km of federal, region or consortium unpaved roads and 1,500 km of other dirt tracks.



**Track from Soddo to Diguna Fango District, where a modern road has just been built**

(M. D'Agostini)

In the area capital Soddo and in the main district seats, such as Areka, there are a lot of *bajajs*, small covered three-wheeled vehicles, typically light blue, similar to light commercial vehicles, which make sure everyone can use urban transportation at decent prices (around 2 *birr*). Private motorcycles are also relatively widespread, while traffic of private autos, even in cities, is pretty thin. In the whole Wolaita Zone around 11,000 driving licences are registered, with 3 organisations for public transportation, 2 associations for freight transportation and about 560 minibuses.



**Bajajs in Sodo**

(M. D'Agostini)

As regards other infrastructures, there are 47 kilometres of water pipes, 160 kilometres of various canals aimed to facilitate road drainage, to prevent soil erosion and allow drainage of rainwater and river floods, plus 16 kilometres of bridges, and 29 kilometres of electrical lines. Regarding the access to energy sources, there are also 47 biogas installations of at least 6 m<sup>3</sup>, plus 73 photovoltaic systems located within residential plots, 28 public-owned photovoltaic systems and 11,400 solar lanterns.



**Stone basin for processing manure to produce biogas**

(M. D'Agostini)

Businesses in *Wolaita*, other than in the agricultural sector, operate in fields such as trading, services, manufacturing, constructions, wood and bamboo craft, metal works, production of stone chips and gravel. There are 1,525 registered cooperatives with around 137,000 members and a total asset of 82 million Ethiopian *birr* (about 3.5 million dollars). Some of these cooperatives (mostly the ones of coffee workers) are gathered in the 7 unions, formed by 162 cooperatives with an asset of 19.8 million *birr* (about 0.8 million dollars). These cooperatives have a multi-functional rural purpose, which means they are specialised in specific sectors like savings, credit and microcredit, services for consumers, development and preservation of forests, irrigation systems, production of honey, real estate, employment and youth education, production and trade of fruit and vegetables, leather, trade and gathering of seeds, crafts, milk and dairy, livestock, fishing, ginger, excavators and cargo machines, installation of solar panels, manufacturing ceramics, mining products and energy saving.

### **2.3. Other social indicators**

Regarding other social indicators, life expectancy in *Wolaita* seems equal, if not superior, to the national one, between 60 and 70 for men and between 70 and 80 for women, the national average being 64.6. In particular, the infant mortality rate in the area is lower than the national average, with 1.38 per thousand citizens against the national 4.1 per thousand citizens. The infant mortality rate for children less than 5 in *Wolaita* is 1.0 per thousand citizens, the national datum being 5.9 per thousand citizens.

There are low levels of literacy and professional training in the country: at a national level (2010), 78% of the urban population can read and write, while only 39.5% of the rural population is literate (2011). In the SNNPR (2011) the average years of schooling are 2.7.

The education ratio appears to be inferior to the national one instead (though it's difficult to make comparison between the different sources we used for gathering local and national data). The education ratio regarding primary school in *Wolaita* is 25% and goes down to 14% for secondary school, for a total 49% against a national global education ratio of 85.8%, with 36.2% of the population in possess of a secondary education. Regarding the national literacy rate for adults, according to the data from African Outlook 2016<sup>14</sup>, based on the average between 2010 and 2015, we can notice a remarkable difference between the younger generations (15-24), which score 69,5% with a relative balance between men and women (71.1% against 67.8%), and the total of the people over

<sup>14</sup>Ref. African Economic Outlook 2016, cit.

15, whose literacy rate goes down to 49.1%, with a broader gap between men (57.2%) and women (41.1%). We can now move on to a more analytical exam of similar data collected in a research by the World Bank<sup>15</sup>; the literacy rate ranges from 14% among women older than 30 in rural areas (which should be in line with the reality in Wolaita, an area which is predominantly countryside) to 98.2% and 95.8%, respectively, for young men and women between 15 and 19 in major urban settlements. As far as it concerns school infrastructures in particular, there are 496 primary schools in the Wolaita Zone (which means, about one per each village) and 63 secondary schools.

According to the situation we found on site during our visits, we think that the fact that indicators for access to drinking water and bathrooms are better in Wolaita than the national average could be ascribed to different methods of gathering information. Access to drinking water is available in 73,45% of the cases in the urban areas of Wolaita against the national 93%, while the percentage is higher (58%) in the countryside of Wolaita against the national 49%. Similarly, 68% of the urban population of Wolaita has access to a toilet against the national average of 27%; the percentage goes up to 63% of rural areas in Wolaita, against the national average for rural areas of 28%. These data appear more clearly according to the aforementioned accurate study by the World Bank about the rural environment, which indicates how, on a national scale, only 0.5% of residential houses in rural areas has access to toilets with water drain against 16.1% of major urban settlements. Furthermore, both in the cities and in the countryside more than 40% of toilets in private houses are constituted by simple pits with planks or other means of supporting oneself, while 33,3% of the families in rural areas and between 6% and 14 % of urban families simply has to recur to fields and woods.



A school in Diguna Fango district (Offices are green, classrooms are blue)  
(M. D'Agostini)

Though the presence of primary and often secondary schools in most *kebeles* (villages) grants a good level of education for the younger generations, the lack of electricity in many villages – among whose are almost all 100 *kebeles* involved in Mighib La Hullum Project – prevents the organisation of evening courses to fight the illiteracy of the older generations, people working in the fields during the day.

<sup>15</sup>Ref. “LSMS—Integrated Surveys on Agriculture Ethiopia Socioeconomic Survey (ESS) - 2015/2016”, cit.

The lack of electricity pushes families and students to use, to have dinner and study, kerosene lamps whose fumes saturate the typical rural houses, generally made of a single room, with walls of wood, straw and mud, seldom whitewashed and with thatch or iron roof. The smoke of the kerosene causes widespread eye disease, for people who struggle to study among the fumes of that faint light and for the respiratory and gastrointestinal systems since the smoke of the kerosene stains all cooking utensils.



**A typical kerosene lamp used in the evening at home to study or have dinner**  
*(M. D'Agostini)*

There are other diseases which are widespread in Wolaita, such as the ones deriving from drinking non-drinkable water, neither filtered nor boiled, taken from rivers or streams contaminated by sewage or vermin, or from pits on polluted aquifers.



**This stream is important for the village of Fungo Bijo in the Diguna Fango district.**  
*(M. D'Agostini)*

#### ***2.4. Agriculture and the rural world in Ethiopia and Wolaita***

Agriculture absorbs about 85% of the total workforce in Ethiopia, though the service sector represents the most conspicuous part of the GDP (46.6%), against 38.8% of agriculture and 15.2% of industry.

Many other economic activities depend on agriculture, such as marketing, processing and export of agricultural products. Most of the production and of the export come from small farmers and businesses.



Edited by  
Marco D'Agostini

The most widely grown crops include coffee, legumes, oily seeds, cereals, potatoes, sugarcane and vegetables.

During 2015, Ethiopia faced one of the worst droughts in the last 30 years, caused by El Niño, which caused a massive spoiling of the crops and the lack of fodder for the animals. About 10.2 million people were severely hit by the drought and needed emergency help and non-dietary help in 2016.

Agriculture and rural transformation still remain key subjects in GTP II. The most important goals of GTP II regarding agriculture are the improvement of production and productivity of crops and livestock, the promotion of a preservation culture and of the usage of natural resources, and the improvement of food availability, as well as the prevention and the enhancing of reaction skills to catastrophes. The government plan is intended to promote agricultural production by solving the problems of supply and technological update, focusing on small plots (since the property is public and granted individually by the Government to the single farmers or families), allowing the sector to play its role in the stabilisation of the economy and sustaining the transition towards a modern agribusiness.

In this context, the Agency for agricultural transformation has found 31 ideal clusters of agricultural commercialisation. The federal Government has thus elaborated an ambitious plan to create integrated, environmental-friendly agro-industrial parks, which will link the production of crops and livestock to storage and processing structures in order to improve the chain of the agricultural value. Four agro-industrial parks have so far been identified<sup>16</sup> – in Baeker, West Tigray, in Bulbula, in mid-east Oromia, in Bure in southwest Amhara and in Yirgalem in the SNNPR area – around which the rural processing centres will be set up, that will act as gathering points with the organisation of agro-industrial forums to bring potential investors. The agro-industrial parks will have modern warehouses and market structures to be linked with surrounding farmers' communities, which will contribute in updating agriculture, promoting the private sector and generating jobs.

These parks will make sure to improve the value of high-potential Ethiopian products like coffee, for example. Ethiopia produces the best Arabian coffee in the world and it's renown among the people in the sector for having a broader genetic variety of coffee than any other producer. Ethiopia is among the first five coffee exporters in the world.

Ethiopian sesame seeds are also largely appreciated on the international market. Their production is doubled during the last five years. Ethiopia produces very different variety of sesame; nowadays it strives to improve yield and enhance the production of seeds, even by expanding the plots.

Regarding livestock, with a population of 55 million animals, Ethiopia is the first producer in Africa and the tenth on a global scale. Meat processing in Ethiopia could be vastly improved; nowadays, meat is largely processed through traditional, small-scale practices. Ethiopia has already established some stable partners for meat trade like Ivory Coast, Congo Brazzaville, Dubai, Egypt, Saudi Arabia and Yemen. The abundance of livestock, the favourable climate conditions, and the availability of high-yield animal species give Ethiopia a strong potential in order to further develop its milk-and-dairy sector as well. Furthermore, the request for poultry is rapidly growing in Ethiopia; the Government has recently set some new goals to raise production to 164 tons and the production of eggs to 3.9 billion within 2020, goals which can be achieved mainly through the improvement of species.

<sup>16</sup>Ref. <https://isid.unido.org/files/Ethiopia/Integrated-Agro-Industrial-Parks-in-Ethiopia-booklet.pdf>



**A stove for the production of spicy smoke to attract bees on the farm dedicated by WODA to agricultural training**  
*(M. D'Agostini)*

Honey is also a high-yield product; Ethiopia is the tenth biggest producer in the world and the first in Africa, and it's fourth for the production and export of beeswax. The agro-climatic conditions and biodiversity favour the differentiation of flora necessary for bees and the growth of their colonies.

Ethiopia produces more than six million tons a year of corn, and has recently improved its farming methods; corn is a very apt product for production and processing, both for middle-sized and for big businesses.

Tomatoes are nowadays grown almost all around Ethiopia. During the latest years, access to different varieties of seeds and services of rural assistance and training have improved, insects and the main diseases are under control and the harvesting and post-harvest were optimised; the yield of tomatoes in Ethiopia may as well reach 80 tons per hectare, which ensures a constant and abundant offer.

Among the many products which are susceptible of the greatest improvements there are potatoes, which particularly enjoy agro-ecological and soil conditions in Ethiopia. Potatoes are a short-time crop and can yield up to 30-35 tons per hectare during a three- or four-month period. Between 2008/2009 and 2012/2013, the total production of potatoes rose by 125% and the yield by 44%.

Agro-industrial parks also have the purpose to attract related investments, apart from supplying agricultural support services (such as research on renewable energies, bio fuel and fertilisers, developing infrastructures aimed for transport and storage, providing rural credit, farm holidays and ensuring crops), processing products such as fruit, cured fruit, tomato paste and cream, starch, coffee and tea, vegetable dishes, powdered spices, oil and oleoresin, whole spices, essential herb oil, flower concentrates, vegetable oil, bread, pastry, energy food, flour milling and other processed foods.

As far as it regards socio-economic organisation in a countryside environment – which involves 81-83% of Ethiopian population and 85% of the population in Wolaita – the aforementioned research by the World Bank<sup>17</sup> points out that the average size of rural families is 5.2 people per family (against 4.3 and 3.7, respectively, in small and big cities), with a national average dependency ratio (people in non-working age compared to people in conventional working age, 15-64) of 88% – against the average 97.7% in the Wolaita Zone – which is higher in rural areas (100%) than in minor (69%) and major urban areas (48%). We can thus state that the average indicator for Wolaita, including urban areas, is almost the same as the national indicator for rural areas only.

<sup>17</sup>Ref. Central Statistical Agency of Ethiopia and Living Standards Measurement Study (LSMS), World Bank, “LSMS—Integrated Surveys on Agriculture Ethiopia Socioeconomic Survey (ESS) - 2015/2016”, 2017, cit.

The Wolaita Zone is therefore predominantly rural in which approximately 85% of economic activity is represented by agriculture, mainly of a traditional type and characterized by a family/informal work organization and low productivity. The cases that practice more advanced techniques and better production are a marginal part of the reference population and are mostly cooperatives.

Climate change in the area is evident in the general increase in temperatures (in particular, increase in days and nights particularly hot) and by a change in the behavior of rainfall, the variability of which represents the factor that most affects the harvest and therefore the entire economic activity and nutrition of the population. These circumstances contribute to increasing the strategic importance of the specific ways in which agricultural activity is implemented, especially in relation to water management. The two agricultural production seasons, Belgian and Meher, coincide with the two rainy seasons (the short and the long respectively), and the first is the period in which the harvest is greatest.

Agriculture is not only practiced in rural environments (98% of the families), but also in urban areas (64% of the families in minor cities are farmers). On average, a family farm has 11 fields, measuring about 0.13 hectares each. The average size of agricultural terrains available to each family in Ethiopia, according to the aforementioned study by the World Bank, is 1.38 hectares (which goes down to 0.77 hectares for the SNNPR region, where the Wolaita Zone was located before the recent before the recent dismemberment of the region), of which 1.04 hectares are used for farming (0.57 in the SNNPR region). These plots may vary wildly according to the place and the kind of family, but during our visits in Wolaita we were able to verify that, in particularly overpopulated villages, the average "plot" assigned to each family may even be reduced to 0.1 hectares, equal to the average size of a single field in Ethiopia (0.07 hectares is the datum regarding the SNNPR region). In further details, according to the aforementioned random study conducted by the World Bank, 68.9% of the surface of SNNPR is used for farming, 8.7% is pastureland, 3.3% is left to rest, 4.8% is made up by forests and 11.3% is reserved for buildings to live and work in.

The main crop in Wolaita, for consumption and sale on the market, is corn, which is alternated in the highlands with beans, in the midlands with wheat and barley, also sold on the market or consumed by farmers. Tubers are an important food source in the area, and represent the other main crops, specifically potatoes and the local ensete (false banana), cassava and taro.

The most widely used modern production aid is fertiliser. For the main crops of cereals, the use of fertilisers ranges from about 38% of the producers for sorghum and 83% for wheat. The use of augmented seeds is relatively common for corn (31%), and it goes down to 2-8% in the case of other crops. The number of farmers who utilise pesticides and fungicides is relatively limited (from 0,3% to 8% according to the crop); weed killers are more widespread, particularly for teff and wheat (respectively 44.4% and 47.5%).



**A yoke of oxen utilised for plowing a corn field in  
Wolaita**

(M. D'Agostini)

As regards yield, the following main crops have registered an amazing productivity in the *meher* (great rains) season of 2015/16: corn at about 1.8 tons per hectare; wheat at 1.4 tons per hectare; barley at 1.0 ton per hectare; sorghum at 0.8 tons per hectare; finally, teff at 0.7 tons per hectare.

A detailed analysis of the destination for these five products revealed that the production is mainly used (60%-80%) for own consumption. The percentage of crops reserved for sale goes from 6,4% (for sorghum) to 21% (barley). The quantity of products reserved for sale varies according to the type of crop as well. The farmers' families tend to sell higher-value products, such as teff and wheat, and to consume lesser-value cereals like sorghum and corn.

About 90% of rural families and 48% of families in small cities own livestock, mostly cows of native races. The use of modern production aid is limited to vaccinations, while traditional practices are otherwise followed. Considering breeders in rural environments as a whole, 87.9% owns cows, 39.9% sheep, 31.1% goats, 8.5% horses, 40.0% donkeys, 2.6% mules, 2.9% camels, 60.3% chicken and 9.1% beehives.

The percentage of families which need aid like free supply of food is remarkably high, reaching up to 11.9% in the countryside against 2.0% in bigger cities and 7.6% in minor urban settlements.

Skipping to a more specific description of Wolaita, there are about 331,000 family farms (the head of the household being a man in 282,000 cases and a woman in 49,000 cases, 15%) on a total of 396,000 families registered in the Area. The total surface is 4,471.3 km<sup>2</sup> of whom 232,867.12 hectares (ha) are fit for cultivation; farmed land corresponds to 142,684.88 ha (61,3%), while 91,427 ha are covered by forests and 48.082 ha are pastureland (20,6%), 17,022 hectares are irrigable and 3.113 are in fact irrigated<sup>18</sup>.



**The ensete tree or “False banana”**  
(M. D'Agostini)



**The cutting of the ensete bark from which a sort of crumb is extracted**  
(M. D'Agostini)

Among the typical products of the area are tea, wheat, barley, rice, corn, beans, peas, lentils, and so on, but near each farm or rural house the ubiquitous false banana, as they're called, or “*enset*” (*Ensete ventricosum*), trees can be spotted: a plant which looks very much like a banana tree but doesn't produce bananas. This tree grows also without irrigation and constitutes an emergency asset for all those rural families that don't have an irrigation system and barely manage to obtain a harvest per year, which, in addition to not producing significant income, is often not enough to feed the family itself. *Enset* is exploited only if needed: it's not a seasonal plant, it's available all-year long and, when other resources dwindle, it's appreciated for the soft internal part of its bark, which, if left to ferment for about two weeks, can be later used to produce bread, crackers or even soups.

<sup>18</sup>Ref. <http://www.wolaitaonline.org/about-Wolaita/>



The crumb obtained from *ensete* tree bark  
(M. D'Agostini)



A "loaf" made with the crumb of the bark of the *ensete*  
(M. D'Agostini)

According to a research by FAO, enset gives a bigger quantity of food per surface unit than most cereals. It has been calculated that in a 250-350 m<sup>2</sup> can grow from 40 to 60 trees which can supply enough food for a 5 or 6-people family . A fibre can be extracted from the external part of the bark which is largely used to make ropes, twines or cloth.

Animal species found in *Wolaita* are the same as in the rest of the country, like donkeys, hens, goats, horses, mules, sheep and cows; there are also two slaughterhouses. Breeding, however, is often not practiced on *Wolaita* farms due to the lack of access to water, which prevents the animals from being guaranteed watering.

As regards vegetables in particular, the total surface reserved for their production is about 7,663 hectares. Among the most largely cultivated products are skull cabbage, local cabbage, carrots, beets, tomatoes, red and white onions; the production quantities are respectively 178,612, 630,706, 117,973, 4,7204, 46,061, 296,534 and 43,739 quintals.

As concerns fruit, the total surface reserved for its production is about 8,920 hectares. Among the most widespread products there are (with respective production in quintals):

- bananas (429,989);
- oranges (22,712);
- papaya (17,776);
- avocado (471,212);
- mango (310,551);
- satsuma (1,950);
- apples (1,221,);
- zeyton (6,560);
- gizta (7,800).

As concerns cereals and legumes, cultivated on about 68.390 hectares, among the most widespread products there are (with respective production in quintals):

- teff (576,502);
- barley (93,602);
- wheat (443,084);

- corn (2,150,450);
- sorghum ((70,853);
- beans (60,187);
- peas (108,468);
- misir (1,500);
- lentils (05,677);
- cheat pea (51,371);
- sunflower (10,650);
- tic beans (54,517);
- broad beans (49,147);
- peanuts (10,432);
- cotton (40,123);
- spices (85,996).

About 3.695 hectares are used for other crops, such as (with respective production in quintals):

- selit, 5,884
- nug, 200
- Gomen zeri, 13,325
- green beans, 1,283.642
- edible roots, 18,273.353,
- *enset*, 1,384,383,
- manioca, 2,493,861
- sweet potatoes, 7,686,329, and
- and coffee, 96,762.

As regards livestock, the following animals are bred in Wolaita:

- cows (1,260,771 animals),
- sheep (171,323),
- goats (275,263),
- poultry (840,952),
- hens (1,073,316),
- horses (7,424),
- donkeys (67,613),
- mules (4,267).

Regarding farmers' cooperatives, we refer to the data quoted in the previous sections, as most of the cooperatives we indicated operate mostly in agriculture: among these, point out 78 multi-function rural cooperatives, 20 cooperatives specialised in forest preservation, 12 which operate in the irrigation field, 16 in honey production, 8 in production and trade of fruit and vegetables, 2 in production of seeds, 4 in the milk and dairy sectors, 6 in livestock, and 1 in the production of ginger. Ginger in particular was once one of the most profitable crops in the area, but it's now in decline following the spread of diseases and parasites; Ethiopian research centres are now working on the issue, looking for more resilient varieties.

The project therefore was aimed to address some of the main problems affecting the Wolaita Zone: poverty, food insecurity, lack of agricultural productivity, difficult connections of farmers' associations with the market, a low number of processing companies for agricultural products, the lack of modern agricultural tools such as irrigation systems, cold storage and solar pumps. All these problems are interconnected: the lack of energy and irrigation systems causes food insecurity and lack of jobs in rural areas and a strong propensity to emigrate to urban areas and abroad; the lack of drinking water generates diseases caused by the use of non-potable water; food shortages often cause malformations in children; the absence of clean energy often causes diseases linked to breathing fumes emitted by kerosene lamps in areas where electric light is not available and deforestation to obtain firewood.

In Wolaita, the harvest often does not produce enough for markets or to feed farmers' families. Farmers and agricultural cooperatives, as a result, do not save enough money to invest in their lands with wells or irrigation systems, so crops are only irrigated when it rains and harvests are poor.

The Regional Center for Agricultural Research of Areka, in Wolaita, is promoting innovative and resilient processes and products, such as the replacement of ginger (a very important crop in the area, but infected by frequent diseases caused by parasites) with other unaffected ginger varieties from the same disease or with new crops such as turmeric. Federal, regional and territorial governments are implementing rural development training programs through government-appointed agricultural technicians.



**Cultivation of cassava in Areke Agricultural Research Centre**  
(M. D'Agostini)



**Plantation of enset (false banana trees) in the Areke Agricultural Research Centre**  
(M. D'Agostini)

### 3. Districts involved in Mighib La Hullum Project

The reference context of the “Mighib La Hullum” Project is made up of the rural communities of the districts of Diguna Fango, Kindo Koysa and Offa, in the Wolaita Zone, located within the SNNPR region at the time of the start of the project, in 2020, and, which following the dissolution of this region it became the region of South Ethiopia Regional State.

According to data collected directly on the ground by the local partner WODA, in the districts involved in the project initiative, some areas are characterized by subsistence agricultural activity, in which structured agricultural enterprises are absent, while others require actions to strengthen the existing agricultural fabric, relatively more advanced and organized. The most common crops in the work area are cereals (corn, wheat, teff), vegetables (beans, onions, tomatoes, hot peppers, cabbage, tubers), fruit (mango, avocado, papaya and enset or false banana). The area also has strong potential for honey production. From a broader point of view, the agricultural production systems in the area are still very backward and the greatest need highlighted by the local counterpart is to create an efficient production and market system capable of improving farmers' income and the food security of the entire community.

#### 3.1. Diguna Fango District

Located in the Great Rift Valley, the Diguna Fango District, originated from the separation from Damot Weyde is situated at the eastern end of the Wolaita Zone and is bordered to the Southwest by Damot Weyde, to the West by Damot Gale, to the North by the Hadiya, to the North-East from the Oromia Region and to the East from the Sidama Region. The capital is Bitena Town.

The District has a population of about 127,810 inhabitants, according the Ethiopian Statistical Service data of 2021, 49% men and 51% women (according to sources in 2021, 62,698 and 65,112, respectively), of which 51.1% is less than 15 years old and 2% is above 65 years old, therefore with an index of dependence of 113.2%, higher than the average of the Wolaita.



The headquarters of the "Town Hall" (on the right), the Local Manager's Office (Development Agent) of the District Office for Rural Development (left) and the school (in the background), in the Village of Fango Damot, in the Diguna Fango District

(M. D'Agostini)

23,026 out of 23,406 (year 2015) households, which have an average size of 5 members, which comprise 95.5 percent of the population (compared to 85% of the average for the Wolaita area), live in rural areas. Of these, 87.64% have a male breadwinner and 12.36% a female breadwinner.

Mount Abu, 2474 meters, is the highest peak in the District, which is crossed by 2 main rivers, the Bilate and the Charake Wanza and consists of 12,736 km<sup>2</sup> of arable land and 6,165 km<sup>2</sup> of mountain. The maximum and minimum temperatures range between 22.5 and 17.6 degrees centigrade; the average rainfall is between 800 mm and 1200 mm.

In the Diguna Fango District there are 34 *kebeles* (villages)<sup>19</sup>.

<sup>19</sup> Elsevier, Data on the demographics, education, health and infrastructure: Wolaita Zone, Ethiopia, 2018: <https://www.data-in-brief.com/action/showPdf?pii=S2352-3409%2818%2931456-2>

The GDP per capita is 155 dollars (against the average of 279,5 dollars of the Wolaita Zone) and the official unemployment rate is 8,1%, which is higher than the national average and lower than the one of *Wolaita*, but even in this case it is due to a different approach to the unemployment registers in the rural vs. the urban environment, than to a greater economic well-being than the rest of the Zone. A possible empirical finding on this hypothesis is given by the high number of residents who emigrated abroad or in other regions, equal to 151, in 2014, 105 in 2015 and 74 in 2016, which is an obvious alternative to the condition of remaining unemployed in the land of origin. Furthermore, in 2015 there was a workforce of 52,914 people (of whom 52.92% women and 47.98% men) of which 433 employees in industry, 945 in trade and services and the rest in agriculture. In particular, tourism does not seem to appear among the sources of income, since there are no arrivals of tourists.

As regards infrastructure, there are no railways or paved roads, but there are 48.1 km of rural roads with about 150 driving licenses and 6 minibuses registered in the district. In the same area there are also 5.5 km of water transport pipelines as well as 33.6 km of drainage and soil management channels. As for energy sources, there are 0 biogas plants, 8 photovoltaic plants for residential or private use and 3 photovoltaic plants of public interest as well as 613 solar lanterns. On the other hand, there are no data on consumed or available kWh through the electricity network that however reaches the capital and some *kebeles*.

Among the economic activities carried out, in addition to the prevailing agriculture, there are wholesale and retail trade, small industries, services and manufacturing activities in wood, bamboo, metal, quarries and crushed stone sectors and building industry.

In 2015, 155 cooperatives with 7,354 members and a total capital of 8.3 million *birr* (about 360,000 dollars) operating in sectors similar to those found in the previous district, were also registered.

As regards other social indicators, life expectancy coincides with that of the local Zone, while there appear to be no district-related data on the infant mortality rate. In the District there are also a hospital, 54 rural health centres, 48 primary and 4 secondary schools, as well as 36,844 residents with a primary education (with a prevalence of men, 52%) or secondary (with a prevalence of women, 54%).



**Health garrison in the Village of Fango Damot, in Diguna Fango District.**

(M. D'Agostini)

As regards agriculture, this sector involves 6,709 households for the production of vegetables, without indication of the cultivated hectares (main products are: skull cabbage, local cabbage, carrots and tomatoes), while 1,138 hectares are used for fruit trees (main products: birtukan, banana, papaya, avocado, mango and zayton), 3,048 hectares for cereals and legumes (main products: teff, wheat, corn, beans, green beans, fava beans, sorghum, fodder, lentils and peas) and 258.9 hectares for other products (*enset*, cassava, sweet potato, coffee, cotton, sunflower seeds, beets, etc.)<sup>20</sup>. There are irrigation systems fed by the river Bilate. Irrigation systems ensure better production and sometimes,

<sup>20</sup> The annexed tables show the production in quintals for the main products.

a greater number of crops, but generally, at least for what concerns the sites visited, we talk about systems with high dispersion, simple ditches fed by natural watercourses, where present, and only during certain seasons, when water flows by gravity when river levels allow it. Only in rare cases there are small diesel pumps available, that allow water to be introduced into irrigation channels even when the flow of rivers and streams is lowered but diesel pumps often lie abandoned because the communities involved (villages, cooperatives or other types of farmers' associations) do not have the cash needed to purchase the diesel.

As for breeding, no slaughterhouse is present in the district and, in 2016, the following varieties were found to be the main ones: 1,057,061 cows, 19,804 sheep, 22,688 goats, 72,749 poultry and 103 horses, 10,654 donkeys and 310 mules.

### 3.2. *Kindo Koysha District*

Kindo Koysha District, North-West of Soddo, originated from the separation from Kindo Didaye, is bounded to South by Offa, to South-West by Kindo Didaye, to West by Dawro Zone, to North by Boloso Bombe, to West by Damot Sore and South-East from the District of the Zone Capital, Sodo: Sodo Zuria. The administrative centre of Kindo Koysha is Bele.

The District has a population of 142,242 inhabitants (69,376 men, 48,8% and 72,866 women, 51,2%), of which 50.1% is less than 15 years old and 1.6% is over 65 years old, therefore with a dependency rate of 109.6%, higher than the average in Wolaita.

26,501 out of 27,769 families, which constitute 92.72 percent of the population (compared to 85% of the average in the Wolaita area), live in rural areas. Among these, 86% have a male breadwinner and 14% have a female breadwinner.



A central street of Bele, Seat of Kindo Koysha District  
(M. D'Agostini)

The Aldada Mountain, with 2,250 meters, is the highest peak in the District - which is crossed by 6 major water courses, in addition to the Omo River which tracks the western borders: the Gerera, the Sangura, the Kela, the Fincha, the Angoto and the Gamuwa - and consists of 52,630 km<sup>2</sup> of arable land, while the data on the extent of the mountain areas is not available.

The maximum and minimum temperatures range between 25°C and 12.6°C; the average rainfall is between 1400 mm and 1600 mm.

In the District of Kindo Koysha there are 25 *kebeles* (villages).

The GDP per capita is 197 dollars (compared to the average of 279.5 dollars for the Wolaita Zone) and the official unemployment rate is 6.9%, higher than the national average and lower than that of the *Wolaita* but that, even in this case, presumably, is due to a different approach in rural vs. urban environments in situations of unemployment, with evident transformation of a part of it into emigration, more than a situation of greater economic welfare than the rest of the Zone. A possible confirmation of this hypothesis is given by the high number of residents who emigrated abroad or in other regions, equal to 621, in 2014, 607 in 2015 and 520 in 2016, an obvious alternative to remaining in the land of origin in condition of unemployment. Furthermore, in the next few years, the local labor market should be positively affected by the investments related to the construction of the nearby Koysha dam and the development of a series of induced sectors (more functional transport, services to support the dam's yards, tourism to the artificial lakes, etc.). In 2015 there was also a workforce of 61,955 people (53% women and 47% men) mainly employed in agriculture. In particular, tourism is among the sources of income, with 1,045 tourists' arrivals (2014).



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As regards infrastructure, there are no railways or paved roads, but 66 km of rural or dirt roads (86 km of drained roads according to other sources) with about 410 driving licenses and 15 minibuses registered in the district. In the same area there are also 6 km of water transport pipelines as well as 3 km of drainage and soil management channels. With regard to energy sources, there are 0 biogas plants, 11 photovoltaic plants for residential or private use and 4 photovoltaic plants of public interest, 1,606 solar lanterns, as well as 3.1 km of electric power lines. On the other hand, there are no data on consumed or available kWh through the electricity network that still reaches the capital and some *kebeles*.

Among the economic activities carried out, in addition to the prevailing agriculture, there are wholesale and retail trade, small industries, services and manufacturing activities in wood, bamboo, metal, quarries and crushed stone sectors, construction and distribution industries.

In 2015 there were also 112 cooperatives with 11,987 members and a total asset of 4.9 million *birr* (about 215,000 dollars), operating in sectors similar to those found in the other districts, as well as an Union of cooperatives with 26 member cooperatives and an asset of 268,548 *birr* (about 11,500 dollars), which gathers together the cooperatives operating in the coffee sector.

As regards other social indicators, life expectancy coincides with that of the whole Zone, while the infant mortality rate is 0.3 per thousand, lower than the overall rate of the entire Wolaita area. In the District there are a hospital, 46 rural health centres, 43 primary and 4 secondary schools, as well as 35,946 residents with a primary education (prevalence of men: 53%) or secondary (prevalence of men: 52.6 %). According to official data, the percentage of inhabitants of rural areas with access to drinking water sources and health services reaches 85%.

As regards agriculture, it involves 16,134 households, without availability of data on hectares planted with vegetables (main products: skull cabbage, local cabbage, carrots and tematim), 603 hectares for fruit trees (main products: oranges, banana, papaya, avocado, mango, gista and zayton), 2,864 hectares for cereals and legumes (main products: teff, wheat, corn, barley, beans, green beans, fava beans, sorghum, gebis, lentils and peas) and an unknown number of hectares for other products (*enset*, cassava, sweet potato, spices, coffee, beets, berber, mashila, drive, dubulbul dinich, etc.). There are irrigation systems fed by the Balia and Ongoto rivers (the considerations on irrigation systems exposed with reference to the previous districts are valid). As far as breeding is concerned, a slaughterhouse is present in the district and, in 2016, the following varieties were found to be the main ones: 181,441 cattle, 34,053 sheep, 12,329 goats, 77,224 hens (2015 data), 994 horses, 8,446 donkeys and 497 mules.

### 3.3. *Offa District*

The District of Offa, South-West of Soddo, is bordered to the South by the Gamo Gofa Zone, to the West by Kindo Didaye, to whom it gave up part of its former territory, to the North by Kindo Koysha, to the North-East by Sodo Zuria, and to the East by Humbo. The administrative centre of Offa is Gesuba.



**Images along the way between the Districts of Kindo Didaye and Offa**  
(M. D'Agostini)

The District has a population of about 139,843 inhabitants (68,457, 49% and 71,386 women, 51%), of which 49.30% is less than 15 years old and 2.40% is older 65 years old and , therefore with an index of dependence of the 107%, higher than the average in Wolaita.

Out of 27,125 households, which on average are made up of 5 members, it turns out that 25,937, which comprise 94 percent of the population (compared to 85% of the average of the Wolaita Zone), live in rural areas. Of these, 88% have a male breadwinner and 12% have a female breadwinner.

Mount Holoze of 2810 mt., constitutes the highest peak in the District - which is crossed by 2 main water courses, the Manisa and the Wiyue - and consists of 20,054 km<sup>2</sup> of arable land and of 1,093 km<sup>2</sup> of mountain.

The maximum and minimum temperatures oscillate between 22.5°C and 17.6°C; the average rainfall is between 1400 mm and 1600 mm.



**The convention centre of Gutara, capital of the District of Offa**  
(M. D'Agostini)

In the District of Offa there are 23 *kebeles* (villages).

The GDP per capita is 175 dollars (against the average of 279.5 dollars for the Wolaita Zone) and the official unemployment rate is 8.5%, higher than the national average and lower than that of the *Wolaita*. Also in this case, the lower unemployment rate is presumably due to a different approach to the unemployment situations in rural vs. urban areas, part of which is transformed into emigration, rather than a situation of greater economic well-being compared to the rest of the *Wolaita*, as shown by the per capita income.

It is moreover a hypothesis that, in the case of the District of Offa, it is not possible to verify empirically, given that the data relating to the residents emigrated abroad or in other regions are not available. In 2015 there was a workforce of 60,997 people (of which 52.54% were women and 47.46% were men), of which 794 were employed in industry, 1,005 in trade and services and the rest in agriculture. In particular, among the sources of income, tourism does not seem to exist, given that there are no arrivals of tourists, although hypotheses of future investments in the sector have circulated during the monitoring visits.

As regards infrastructure, there are no railways or paved roads but 22 km of regional roads and 41 km of federal gravel roads, with about 420 driving licenses and 15 minibuses registered in the district. In the same area there are also 3.4 km of water transport pipelines as well as 13 km of road drainage and soil management channels. With regard to the energy sources, the existence of a biogas



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plant, 7 photovoltaic plants for residential or private use and 3 photovoltaic plants of public interest, 1554 solar lanterns, as well as 1.2 km of power lines are noted. On the other hand, there are no data on consumed or available kWh through the electricity network which however reaches the capital and some *kebeles*.

Among the economic activities carried out, in addition to the prevailing agriculture, there are wholesale and retail trade, small industries, services and manufacturing activities in wood, bamboo, metal, quarries and crushed stone sectors and construction.

In 2015, 128 cooperatives were also registered with 9,219 members and a total asset of 4.9 million *birr* (about 213,000 dollars); they were mainly operating in sectors similar to those found in other districts.

As for other social indicators, life expectancy coincides with that of the whole Zone, while there are no district data on the infant mortality rate. In the District there are no hospitals but there are 43 rural health centres, 32 primary and 4 secondary schools, as well as 35,898 residents with only primary education (30,871) or even secondary education (5,027).

As regards agriculture, which involves 18,230 families, the main vegetables produced (of which the indication of cultivated hectares is not available) are: cabbage, local cabbage, tomato, carrots, onions. There are also 672 hectares for fruit trees (main products: oranges, banana, papaya, avocado, apples, mango and zayton), 1745 hectares for cereals and legumes (main products: teff, barley, wheat, corn, sorghum, beans, green beans, fava beans and peas) and 202 hectares for other products (sesame, berber, mashila, *enset*, cassava, coffee, cotton, beets, gudare, etc.). There are irrigation systems fed by the Adaye Tita river (the considerations on irrigation systems exposed with reference to the previous districts are valid). As far as livestock is concerned, a slaughterhouse is present in the district and, in 2016, the following varieties were found to be the main ones: 83,741 cattle, 11,964 sheep, 45,029 goats, 83970 chickens (2015 data), 619 horses, 5.264 donkeys and 309 mules.

## **4. The activities carried out in framework of the Mighib La Hullum Project**

### ***4.1. Objectives, methodologies, organizational aspects and results of Mighib La Hullum Project***

The "Mighib La Hullum - Food for All" project aimed to intervene to defend and protect the food security and sovereignty of the rural population, with particular attention to children and mothers, in 5 districts (Diguna Fango, Kindo Koysa and Offa) of the Wolaita Zone, in southern Ethiopia.

The lead organization and its partners understand food security as the possibility of guaranteeing each individual access to a quantity of food and water sufficient to satisfy dietary needs and guarantee a healthy and active life, in adequate hygienic conditions, while with food sovereignty refers to the right of peoples to feed themselves with nutritionally and culturally adequate food, produced in a sustainable and ecological way, choosing their own food and production system.

From this perspective, priority has been given to the production and consumption of foods whose production is sustainable on an environmental, social and economic level. Respect for local biodiversity and an approach free from discrimination and with gender equity were kept at the center of the action.

Starting from the assumption that a healthy diet is a fundamental right that is not yet possible to guarantee in Ethiopia, the aim was to organize the activities in such a way as to mitigate undernutrition and malnutrition in rural areas, reduce the risk of diseases and the difficulty of children's learning in schools, improve hygienic conditions and encourage good practices aimed at guaranteeing health within families.

In particular, we focused on the themes of land and water as a function of correct nutrition.

The beneficiaries were the farmers, women (especially mothers), children and adolescents from the 3 districts of Wolaita, involved in the project, active protagonists in the actions aimed at generating lasting change. from a perspective of social inclusion and with a perspective of gender equality.

The Project aimed to address the strong crisis situation linked to the issues of food insecurity and malnutrition (children and adults), with a multidisciplinary approach that combines different methodologies to achieve an objective of priority importance in Ethiopia, that of guaranteeing an improvement in the security and food sovereignty of rural populations, among those most affected by the environmental and food crisis and the negative effects of climate change.

Mighib La Hullum Project was formally launched on October 1<sup>st</sup>, 2020, with the signing of the related agreements between the lead partner, the European Committee for Training and Agriculture (CEFA) and the Italian Presidency of the Council of Ministers, and ended on May 31<sup>st</sup>, 2023, after that the previous term of September 30<sup>th</sup>, 2022, has been postponed by the Italian Presidency of the Council of Ministers.

After the pre-feasibility and general design analysis phase, the signing of the memoranda of understanding between CEFA and each of the partners and the authorization by the Ethiopian Authorities to the program of activities to be carried out in site have been important moments. This Authorization required in particular a close interlocution between the Ethiopian partner, WODA (Wolaita Development Association), and the Regional Administration of SNNPR (the Region of Peoples, Nations and Nationalities of the South) and the redefinition, by the coordinating subject CEFA, of the planning of some operational aspects. In fact we note that, among others, the first result



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envisaged by the project was the creation of five green farms, one for each of the 5 Districts whose involvement in the project was initially envisaged: Boloso Bombe, Diguna Fango, Kindo Koisha, Kindo Didaye and Offa. Since the difficulties illustrated above forced the project to be concentrated in the three districts of Diguna Fango, Kindo Koisha and Offa, 4 Green Farms were finally created, one for each of the aforementioned Districts plus a fourth green farm in the Agricultural Training Center of Ampo Koisha in Humbo District.

The project was therefore implemented in 3 districts of the Wolaita area (Diguna Fango, Kindo Koysha and Offa), in the southern Ethiopian region of the SNNPR, which was transformed, following the dissolution of this region, into the South Ethiopia Regional State.

The direct beneficiaries, identified and quantified through the local partner WODA and the presence of other ongoing project initiatives in the same districts, were: 500 farmers; children and young people from 10 schools (6-17 years); 150 mothers of families. The final recipients are women, men, young people and children from rural areas who, once involved in the project, will contribute to raising awareness among the entire community population.

Firstly, the CEFA team, in collaboration with the local counterpart WODA, has developed a training and provision of agricultural services for the production of food intended for family consumption and the local market. We worked on improving land and water use techniques by making use of the work of expert technicians who, in synergy with the beneficiary population, enhanced and improved the traditional techniques widespread in the region from a productive and environmental perspective. The reference methodology in the agricultural sector is that of the FFS Farmer Field Schools, which brings together concepts and methods from different approaches: agroecology, experiential education and community development. The objective of this methodology is the empowerment of learners who, by actively and directly participating in agricultural activities put into practice on experimental fields, are protagonists, although guided by expert technicians, of research, training, marketing and advocacy activities.

As regards the intervention in schools, it was aimed at involving children and young people, a fundamental part of the Ethiopian population, highlighting the importance of making this large part of citizens participate in social and political issues, since they constitute the future of the country. The use of playful-pedagogical techniques stimulated participation and dynamism during the workshops.

The production of educational and information material - for school children and young people, mothers involved in nutrition training activities and farmers involved in agricultural training - aimed to give visibility to the actions to be carried out and reach a wider segment of the population, also attracting the attention of local authorities, responsible for implementing policies useful for improving the economic and social situation at a regional level.

Finally, the gender perspective constituted a transversal axis of the project, giving particular attention to the women of rural communities, active protagonists of a culture of change for the improvement of the quality of life.

From an organizational point of view, the project was therefore carried out in close collaboration with the partners and institutions involved.

As regards human resources, in an initial phase, the figure of an expatriate project manager was envisaged, based in the CEFA office in Soddo, who was replaced, during the course of the project, by an Ethiopian citizen residing locally, who followed the initial phase as assistant coordinator and personally coordinated the entire final phase of the project action. He took care of the general coordination, the networking of the actors involved, the coordination of the organization of the trainings, the reporting and the management of the relationships with the CEFA desk in Addis Ababa and, together with the Addis Ababa desk, he took care of the relations with the CEFA headquarters in Bologna and with the CCCA partner in charge of monitoring and impact assessment. The project

manager also had the task of meeting with the representatives of WODA for the planning and evaluation of necessary adaptations of the activities envisaged by the Project to the situations on the field.

The agricultural training and technical support in the field were managed by an agronomist technician who was also responsible for coordinating the work for the preparation of the Green Farms. An agricultural worker worked continuously on the farms, and other workers occasionally, with the responsibility of maintenance and management of the production part, which will guarantee the economic sustainability of the farms themselves.

The field training of the beneficiary farmers on Good Agriculture Practices (GAP) was followed by CEFA field agents while WODA took care of the creation, management and maintenance as well as the demonstration activities linked to the nurseries with which the green farms were equipped, the relationships with the local authorities, the selection of the beneficiaries and assumed the supervision of the green farms for the purposes of their future sustainability and with a view to their replicability by other local farming communities.

The CEFA desk in Addis Ababa, in collaboration with CCCA, oversaw the verification of the social and orographic conditions of the sites, the search for experts for the design, installation and maintenance of irrigation systems powered by solar energy, the search and selection of suppliers on the Ethiopian market for the supply of related materials (fixed and mobile pumps, solar panels, inverters, pipes, etc.).

CEFA, WODA and CCCA also followed the relationships with the local farmer communities and assisted in the preparation of memoranda of understanding and associated business plans for the management of each of the green farms while WODA also took care of the related authorization processes with the local authorities.

We also made use of the collaboration of an international nutrition expert who, together with a local expert, had the task of building the workshop model and drafting the teaching material on the topics of nutrition and food safety. The local nutrition expert also had the specific task of translating the teaching material and carrying out all training and awareness activities. WODA, also in this context, took care of the selection of mothers who participated in the courses on nutrition, the selection of schools and relations with the competent local authorities.

In terms of physical resources, agro-zootechnical material was purchased for the Green Farms (seeds, metal nets, wood, cement, fertilizers, tools, nursery materials, etc.), irrigation material (generator/pump group, pipes, fittings, micro demonstration systems, tanks, lubricants, maintenance), a pick-up for transporting people and materials, a portable PC for office use. Furthermore, transport costs for training, technical visits (car insurance, fuel, tolls, public transport) were covered and a recipe book and a guide document on the sustainable use of water were created and disseminated.

The Project initially planned was aimed at the following results:

1. Result 1: *“5 experimental green farms intended for production, field training, demonstration of low environmental impact techniques, generation of quality agricultural inputs and affordable prices created in the Districts of Boloso Bombe, Diguna Fango, Kindo Didaye, Kindo Koysha and Offa”*.
2. Result 2: *“500 farmers from the 5 districts trained on: improved agronomic techniques for cereals, vegetables and honey, irrigation techniques, seed production”*.
3. Result 3: *“Raising awareness among children and young people in 10 schools in the 5 districts on the topic of water and correct nutrition through the creation of recreational-pedagogical activities”*.
4. Result 4: *“Skills in nutrition and correct food preparation for a balanced diet of 150 mothers in the 5 districts strengthened”*.

Given that the unexpected social and political instability related, as well as to the COVID epidemic and the crisis in Northern Ethiopia (which generated clashes and accidents in various regions), the raise of the Ethiopian inflation and to the process of dissolution of the SNNPR region forced the partners to reduce the Project area of intervention from 5 Districts (Boloso Bombe, Diguna

Fango, Kindo Didaye, Kindo Koysha and Offa) to 3 districts (Diguna Fango, Kindo Koysha and Offa), the dialogue with the Ethiopian partner WODA and with the local authorities led to an adaptation of activities to carry out in order to achieve global results as close as possible to those initially planned. Therefore, as regards Result 1 the creation of a green farm for each of the three districts of Duguna Fango, Kindo Koisha and Offa was confirmed and the creation of a green farm in the agricultural training center of Ampo Koisha in the Humbo district was also added, for a total of 4 green farms created; as regards Result 2 the number of the farmers to be trained on Good Agriculture Practices for each of the 3 district was increased from 100 to about 166-167 in order to achieve the global number of 500 trained farmers; as regards Result 3, the number of the schools to be involved in creation of recreational-pedagogical activities for raising awareness among children and young people on the topic of water and correct nutrition was increased from 2 to 5 schools for each of the 3 districts in order to achieve the total number of 15 schools involved; and as regards Result 4, the number of the mothers to be involved in activities aimed in strengthening skills in nutrition and correct food preparation for a balanced diet was increased from 30 to 50 for each of the 3 districts in order to achieve the global number of 150 trained mothers.

#### **4.2. Result 1 concerning the Creation of experimental green farms**

As regards Result 1, the creation of experimental green farms, we note first of all the situation of instability in the area - due both to the general tensions in the country due to the crisis in Northern Ethiopia and to the specific local tensions connected to the process of dissolution of the SNNPR region - and the strong inflation recorded in the country in the reference period (26.48%) led the Ethiopian partner and the local authorities to recommend limiting the project to 3 (Diguna Fango, Kindo Koysha and Offa) of the 5 districts initially planned (Bolosso Bombe, Duguna Fango, Kindo Koisha, Kindo Didaye and Offa). In order not to excessively alter the substantial results envisaged in the Project, the creation of a green farm for each of the three districts of Duguna Fango, Kindo Koisha and Offa was confirmed and the creation of a green farm in the agricultural training center of Ampo Koisha in the Humbo district was also added, for a total of 4 green farms created.



**The Ampo Koisha Green Farm pump (left) powered by solar panels (right)**  
(M. D'Agostini)

The Ampo Koisha center is of crucial importance for the Wolaita area both because it has represented a qualified agricultural training structure for the entire area for 40 years and because it was one of the first demonstration drip irrigation systems installed in the area, in the framework of a previous project, with a strategic value as an example of a possible solution to address the problem of climate change which causes a growing problem for food security in the region and the country. This function had failed following the damage to the solar panels that power the drip irrigation system and, thanks to the creation of one of the green farms in the aforementioned center - new solar panels, inverters and other devices were installed, it was defined a specific memorandum of understanding between WODA, which manages the training centre, the community of farmers who will gravitate towards the green farm and the local authorities and a specific business plan was attached - it was possible to reactivate the plant and production activity , training and demonstration that follows.

The theoretical impact analysis and field experience prove in fact that the results of the training are enormously enhanced by the availability of demonstration plants, which allow a world linked to concreteness such as that of peasant communities to verify the effects of more modern systems supported by efficient irrigation. In the case of Ampo Koisha, in particular, the information collected there made it possible to verify that, in the presence of increasing drought linked to climate change, the availability of an irrigation system powered by solar energy allows harvests to be multiplied up to three times.

With reference to Result 1, the creation of experimental green farms, one of the first activities (A.1.1) was the start of the creation of business plans for the sustainability of the green farms themselves. To this end, business plan schemes, regulations and internal procedures functional to the management of Green farms have been developed within working groups assisted by experts and in a participatory manner, useful for guaranteeing economic-financial sustainability and establishing their operating processes.

This activity involved, in addition to the field operators of CEFA and WODA, the Management of WODA, the CEFA desk in Addis Ababa and CCCA, who then discussed, for the definitive adaptation of the texts to the specific local conditions, with the farmer communities involved and, through WODA, with the local authorities.



**The meeting with the farmers of Ofa District for discussing about the draft Memorandum of Understanding concerning the management of Ofa Green Farm**

*(M. D'Agostini)*



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This complex process finally led to the signing of a memorandum of understanding between the associations or cooperatives of interested farmers, WODA and the competent authorities which formalized the final creation of 4 green farms, one for each of the villages of Fango Damot, in the Diguna Fango District, Borkoshe, in Kindo Koisha District, Woshi Wocha Dakaya, in Offa District, and Ampo Koisha, in Humbo District.

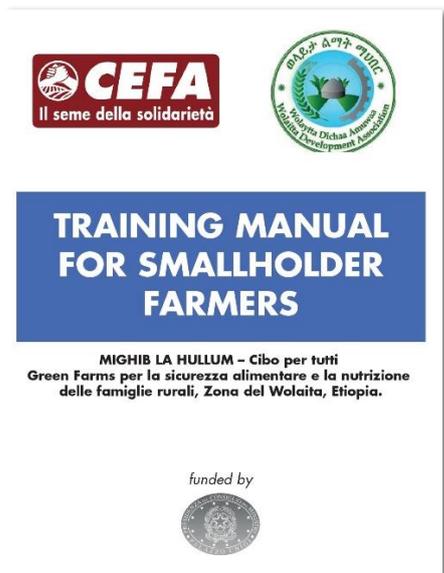
The second line of activity (A.1.2) related to the creation of green farms was the preparation of the necessary conditions to allow the production of cereals and vegetables with modern agronomic techniques, an objective to which the coordination of several activities such as agricultural training, the supply of inputs, the creation of demonstration crops and nurseries, the setting up of the products covered by the aforementioned business plans aimed at consolidating the global sustainability of the result.

In particular, in close connection with the activity concerning the study and implementation of models for the integration of different agronomic and agroforestry techniques for the protection of the agricultural ecosystem, the control of soil erosion, the increase in fertility (A .1.3), experimental productions have been applied in green farms for the production of cereals and vegetables with the following modern agronomic techniques:

- a) Cereals (corn, wheat, teff), produced mainly in the rainy season
  - Improved fertilizations, both organic and mineral, aimed at satisfying the specific needs of individual species for intensive production, also considering the contributions of elements (K, Mg, microelements), currently not considered in the standard dosages traditionally applied by producers, with specific pay attention to the periods of administration;
  - Adoption of sowing distances suitable for increasing unit production and optimizing resources (water, nutrients);
  - Possible emergency irrigation in the event of irregularities in rainfall, especially in the crucial phases of the vegetative cycle of crops;
  - Adoption of short cycle varieties, with minor vegetative development and intensive production, always aimed at optimizing resources;
  - Careful monitoring of crops and application of preventive and control measures for pathogens and parasites (integrated control).
- b) Vegetables (tomato, onion, pepper, cabbage, beans, garlic) both in the rainy season and in the dry season:
  - Targeted fertilization for each species, according to the specific needs in macro- and micro elements;
  - Concentration of interventions for the maintenance and increase of soil fertility: organic fertilizations (compost, mature manure), green manures, rotations, erosion control;
  - Introduction of improved varieties, with high productivity and which offer potential market outlets even outside the production areas (such as Addis Ababa);
  - Careful monitoring and integrated control for the control of pathogens and parasites;
  - Concentration of irrigation interventions, to allow the reduction of water use, the repetition of several crop cycles during the year and therefore counter-seasonal production.

These productions have been promoted not only with the perspective of ensuring the sustainability of green farms but also in order to offer production models that can be replicated at the level of small family farms.

A third line of activity related to result 1 was the study and implementation of integration models of different agronomic and agroforestry techniques for the protection of the agricultural ecosystem, the control of soil erosion, the increase in fertility (A .1.3).



**"Manual for the Training of Small Farmers", developed by the CEFA staff in collaboration with some experts from the WODA partner**  
(Picture by CEFA)

In close connection with the previous activity (A.1.2), studies and applications of production models have been carried out for Green farms which involve the integration of traditional agricultural cereal and horticultural crops (corn, legumes, tomato, onion) with fruit-bearing tree species (mango, avocado, papaya) and agroforestry with multiple uses (erosion control, increase in soil fertility, production of food, fodder or cash crops) in order to obtain cultivation techniques aimed at protecting the agricultural ecosystem, improvement of soil fertility and control of soil erosion, while ensuring the environmental sustainability of the farms. The contents of the above mentioned topics have been developed and systematized within a "Manual for the Training of Small Farmers", which was developed by the CEFA staff in collaboration with some experts from the WODA partner.

Together with the producers, involved in field activities through constant visits to the farms, the technical protocols were defined with a description of the interventions carried out, the species used and the agronomic practices adopted. These production models can also be replicated by the family farms of the members of the cooperatives called to manage the green farms as well as, in cascade, by imitation, by the farmers of the neighboring rural communities.

Experimental plots were also organized in the green farms, in which the agronomic techniques applied to the production of cereals and vegetables were compared with the traditional ones of the area, to concretely show producers the real effectiveness of the improvements introduced.

All the activities carried out were shared with the farmers through training and continuous guided visits; furthermore, in the future, green farms will also play a role of technical assistance for farmers who apply the techniques adopted.

A fourth line of activity (A.1.4) referring to Green Farms was the creation of nurseries for the production of seeds and seedlings, including grafted ones, of tree, shrub and herbaceous species both for agriculture and for integrated agroforestry activities (for the protection of the agricultural ecosystem, the control of soil erosion, the increase in fertility referred to in the previous activity A.1.3), species identified by the production protocols as optimal for the improvement of the agro-ecological conditions of small family farms, which allow farmers to find the vegetative material appropriate to the measures introduced.



**The nursery of Borkoshe Geen Farm, in Kindo Koisha District**  
(M. D'Agostini)

Within the Green Farms, therefore, simple but functional nurseries have been created by the WODA technical team. Working closely with the project partners for the creation of the Green Farms and the establishment of the nurseries in them, the local government particularly appreciate this initiative, requesting to support the local community in reproducing this model also in areas more

easily accessible to others farmers in the area, thus leading to the creation of two additional nurseries. All this demonstrates the success of the collaboration with local stakeholders and the appreciation for the project initiative.



**A moment of the work for the preparation of seedbed for the nursery of Fango Damot Green Farm in Diguna Fango District**

(M. D'Agostini)

The Green Farms have also produced seedlings of horticultural species (tomato, onion, pepper) for companies that adopt integrated agricultural production protocols. Seedlings and other material will also be provided to producers in the form of a crop advance, with recovery of the production cost when the agricultural production is transferred to the Farms.

The Green Farm's specialized staff provided information to producers during training visits, as well as technical assistance to farmers regarding the appropriate techniques for planting and growing the species supplied and the nursery techniques used.

The creation of the nurseries therefore constituted a demonstration activity which directly benefited 429 farmers from the Districts of Digna Fango, Kindo Koisha and Offa who also received seedlings of various types, specified in the following table:

S.N	Name of green farm	Number of farmers	Sex	Number of seedlings distributed per individual							
				Papaya	Avocado	Coffee	Mango	Cassia	Acacia Albida	Shifera w	Gravelia
1	Woshi Wocha Dakaya/ Dike green farm	45	M	24	55	51	49	30	22	38	21
		105	F	22	55	51	49	30	22	38	21
		150	T	3390	8250	7650	7350	4500	3300	5700	3150
2	Borkoshe Green Farm	65	M	20	50	47	45	28	20	35	19
		74	F	22	55,5	51	49	30	22	38	21
		139	T	2928	7357	6829	6551	4040	2928	5087	2789
3	Fango Damot Green Farm	62	M	22	55	51	49	30	22	38	21
		78	F	22	55	51	49	30	22	38	21
		140	T	3080	7700	7140	6860	4200	3080	5320	2940
Total		429		9398	23307	21619	20761	12740	9308	16107	8879

Furthermore, the Green Farm nurseries will in turn constitute models that can be replicated by the neighboring family communities, who will also be able to receive assistance from the Green Farm staff if they want to organize the nursery production of the same species on their own.



**The nursery of Woshi Wocha Dakaya Geen Farm, in  
Ofa District**  
*(M. D'Agostini)*



Last but not least, the installation of demonstration micro irrigation systems for small surfaces, suitable for family farms, constitutes a line of activity of fundamental importance (A.1.5), given the problems arising from climate change, with practical demonstration of the techniques of use in the field.

In the Green Farms, in fact, the use of mobile irrigation pumps powered by solar energy with almost no environmental impact is envisaged and which, unlike diesel pumps (the abandonment of which we frequently found when visiting the villages of the region), do not require purchase of diesel, the price of which has reached unaffordable costs for the majority of farmers and small cooperatives in the area.

Mobile irrigation pumps powered by solar energy are functional systems, available on the Ethiopian market, with low maintenance requirements and a relatively low cost and, therefore, possible to replicate, at least by the most enterprising farmers and cooperatives, once knowledge and productivity have been recognized in rural areas.

Following the inspections on the sites where the Mighib La Hullum Project was carried out and the verification of the devices available from the suppliers in Addis Ababa, the Futurepump model SF2 was selected because of it was found to be appropriate for the reality of the majority of small farms, allowing a clear improvement in terms of quantity and quality of agriculture production, allowing the production of out-of-season vegetables and guaranteeing production in the event of rainfall irregularities in the rainy season. These are models with a strong capacity to traction water from rivers, streams and neighboring canals (up to 7 meters in altitude), can also be used in relatively small or irregular waterways, which cannot guarantee the minimum draught depth required for submersible pumps, and are capable of irrigating plots of up to 1 hectare.

A better knowledge of the territory and of the situation and social organization of the beneficiaries therefore led the partners to confirm the hypothesis of a drip irrigation system supported by a more powerful fixed pump and powered by solar energy only for the aforementioned training center farm of Ampo Koisha in the Humbo district, where, being a larger and more solid structure, there are also the resources to ensure its maintenance over time. For the Green Farms created in the districts of Duguna Fango, Kindo Koisha and Offa, it was instead preferred to opt for the aforementioned mobile irrigation systems powered by transportable solar panels, more suitable for community use by the beneficiaries, farmers who have small plots of land from 0.5 to 2 or 3 hectares for each family, such as to allow rotation in use and greater flexibility in the distribution of benefits. To this end, the definition of appropriate agreements (formalized with the aforementioned Memorandum of understanding) between the members of the local communities, the competent local authorities and WODA for the management of common devices has proven to be of fundamental importance. Following the inspections, the hypothesis of installing fixed micro-systems powered by pedals, intended to pump water into storage tanks, was indeed overcome, having found a low propensity of local farmers for this operating mode.

Therefore, 15 mobile solar pumps equipped with solar panels were purchased from CEFA and entrusted to the cooperatives that manage the Green Farms of Diguna Fango, Kindo Koisha and Offa.



**The training on installation, management and maintenance of solar pumps for operators from the Project staff**  
(Picture by CEFA)

The delivery of the pumps was preceded by specific cascade training on installation, management and maintenance of the relevant devices. The training took place in cascade: 7 operators from the Project staff were trained on topics such as how to assemble the device, how to operate it, how to handle before and after use, what protection mechanisms to be given for the machine and how much HRs to generate and rest the machine. Subsequently, the aforementioned operators trained 450 farmers and 30 government officials from the three districts involved with a 4-hour meeting for each district, for a total of 12 hours of training.

There was also detailed discussion in managements of the pump by each cooperative and how to utilize the pump. During this discussion the cooperative committee, the cooperative members, the government representatives from district and kebele level have agreed in the management and future utilization. The utilization and management system was included by respective aforementioned Green Farm MOU according specific bylaw ruling that the tool was provided for the cooperative for collective use and management and each member has mandate to produce market oriented products and provide them for the cooperative.

After the training was given for farmers, the solar pump were also distributed for each district Green Farm and during the distribution period the government officials from Zone (Zone Agriculture department head and Zone deputy Administrator, Zone Cooperative office head, Zone Finance Coordinator, Zone Administrative Office head) and respective district office participated to give the direction for beneficiaries in utilization and management of the future pump.



**The delivery and installation of mobile solar pumps in the green farms of Diguna Fango, Kindo Koisha and Offa**

(Picture by CEFA)

Therefore 7 future pumps for Diguna Fango, 6 future pumps for Offa and 2 future pumps for Kindo Koysha Green Farms have been distributed based on the extent of available land and their accessibility to waterways.

The aforementioned devices will respond to both production and demonstration purposes. They will ensure the quantitative and qualitative development of the production of the Green farms, they can be used in rotation also for the benefit of the family farms of the members of the cooperatives

who manage the green farms and the methods of use and the effects on production can also be verified by the farmers from the neighboring rural communities, creating the conditions for their replicability

All the activities carried out have been and will be presented and illustrated in the future to further farmers through continuous visits; Farm staff will provide training and information on the characteristics of the systems, on the agricultural techniques used to optimize their productivity and on the results achieved from agricultural production supported by solar irrigation.

#### 4.3. Result 2 concerning the Training of farmers on improved agronomic techniques

As regards result 2 (Training farmers on improved agronomic techniques for cereals, vegetables and honey, irrigation techniques, seed production), the number of the farmers to be trained on Good Agriculture Practices for each of the 3 districts of Diguna fango, Kindo Koisha and Offa was increased from 100 to about 166-167 in order to achieve the global number of 500 trained farmers.

The training courses on GAP (Good Agriculture Practices) at district level were held by local trainers and dealt, in particular, with the following topics: rotation; sanitation of the field; composting and fertilization, weeding, mulching; intercropping; organic fertilization; creation and management of nurseries and seedlings; transplant; fertilizers and their application; main pests and diseases and their control; safe use of chemicals and fertilizers; record keeping (importance of preserving production data and their correct management); post-harvest, marketing and product valorisation methods; main aspects of water management, soil management and conservation.



**Practical training on preparation of compost with natural materials in Diguna Fango District**  
(M. D'Agostini)

2 training cycles of training were organized for each of the Districts of Diguna Fango, Kindo Koisha and Ofa, one on organic fertilization and compost preparation and, the other, on conservation agriculture (crop rotation, soil mulching and no-till sowing).

Both training cycles were structured into a theoretical classroom part, lasting 1 day, in which the technical agronomic principles of the program were addressed and discussed; this was followed by 1 day on-the-job demonstration lessons relating to the GAPs covered by the theoretical part. For on-the-job training for farmers, the "field school" methodology was used, an experiential and practical training methodology where groups of producers, led by technical personnel, met periodically to put into practice the notions learned, and exchange their cultivation experiences. The table below provides a summary of the training cycles and number of participants.

<b>BENEFICIARIES OF TRAINING ON GOOD AGRICULTURE PRACTICES</b>						
<b>Training on organic fertilization and compost preparation</b>						
Year	Month	Date	District	Participants		
				M	F	ToT
2021	Oct	25;26	Diguna Fango	19	11	30
	Nov	10; 11		13	17	30
	Dec	15;16		13	15	28
2022	Jan	26;27		7	20	27

	March-April	31;1		11	19	30	
	July	19;20		6	14	20	
2023	April	25;26		2	17	19	
Total				<b>71</b>	<b>113</b>	<b>184</b>	
2021	Oct	26;27	Kindo Koyssha	19	11	30	
	Nov	9; 10		15	15	30	
	Dec	14;15		15	15	30	
2022	Jan	25;26		7	22	29	
	March	29;30		12	18	30	
	July	20;21		4	16	20	
2023	April	25;26		5	11	16	
Total				<b>77</b>	<b>108</b>	<b>185</b>	
2021	Oct	27;28		Ofa	15	15	30
	Nov	11;12	17		13	30	
	Dec	16;17	12		18	30	
2022	Jan	27;28	11		19	30	
	March	31;01	10		20	30	
	July	21;22	15		5	20	
2023	April	25;26	5		10	15	
Total					<b>85</b>	<b>100</b>	<b>185</b>
<b>Grand TOT</b>					<b>233</b>	<b>321</b>	<b>554</b>
<b>Training on Conservation agriculture (crop rotation, soil mulching and no-till sowing)</b>							
Year	Month	Date	District	Participants			
				M	F	ToT	
2022	Aug	16;17	Kindo Koyssha	24	26	50	
	Aug	23;24		37	13	50	
	Aug	30;31		43	10	53	
Total				<b>104</b>	<b>49</b>	<b>153</b>	
2022	Aug	17;18	Diguna Fango	22	28	50	
	Aug	24;25		37	22	59	
	Aug;Sept	31;01		44	22	66	
Total				<b>103</b>	<b>72</b>	<b>175</b>	
2022	Aug	18;19	Ofa	24	26	50	
	Aug	25;26	Ofa	25	39	64	
	Sept	01;02	Ofa	37	20	57	
Total				<b>86</b>	<b>85</b>	<b>171</b>	
<b>Grand TOT</b>				<b>293</b>	<b>206</b>	<b>499</b>	



**Farmers attending practical training on preparation of compost in Kindo Koisha District**  
(M. D'Agostini)



**Practical training on preparation of compost in Ofa District**  
(M. D'Agostini)

Based on the rules adopted for distancing by the Ethiopian authorities during the COVID pandemic, for the training cycles on organic fertilization and compost preparation, in each of the aforementioned districts, 6 groups of approximately 30 farmers were established.

After the easing of measures for the prevention of the COVID Pandemic, for the training cycles on conservation agriculture (crop rotation, soil mulching and no-till sowing), in each of the districts, 3 groups between 50 and 66 farmers were organised.

Every Group received 1 day of theoretical training and 1 day of practical training from both training cycles, for a total of 4 training days for each beneficiary.

Of these, 499 farmers participated in all the training days provided, while 55 beneficiaries participated only in the training dedicated to organic fertilization and compost preparation. Specifically, as regards this last mentioned group, 50 of them were involved in an extraordinary session, organized in April 2023, at the express request of the local authorities, testifying to the latter's appreciation for the quality and usefulness of the training provided.

In total, 21 training cycles on organic fertilization and compost preparation and 9 training cycles on conservation agriculture (crop rotation, soil mulching and no-till sowing) were carried out.

The total of direct beneficiaries was 554 (233 males, 321 females; of whom, 184 for Diguna Fango District, 185 for Kindo Koisha and 185 for Offa District) people trained on organic fertilization and compost preparation and 499 (293 males, 206 females; of whom, 153 for Kindo Koisha 175 for Diguna Fango and 171 for Offa District) people trained on conservation agriculture (crop rotation, soil mulching and no-till sowing).

The training cycles were also accompanied by follow-up and technical assistance activities, of fundamental importance, carried out by CEFA staff who, by periodically visiting all the beneficiaries involved, were able to support and verify first-hand the effective and correct adoption of practices learned on their respective farms.

#### ***4.4. Result 3 about Raising awareness among children and young people on the topic of water and correct nutrition through the creation of recreational-pedagogical activities***

As regards result 3 (Raising awareness among children and young people of schools in the involved districts on the topic of water and correct nutrition through the creation of recreational-pedagogical activities), the number of the schools to be involved in creation of recreational-pedagogical activities for raising awareness among children and young people on the topic of water and correct nutrition was increased from 2 to 5 schools for each of the 3 districts of Diguna fango, Kindo Koisha and Offa, in order to achieve the total number of 15 schools involved.

A first activity (A.3.1), carried out by the CEFA technical team, consisted of the organization of recreational-pedagogical workshops to raise awareness on the issues of water and correct nutrition in 15 schools of the 3 districts (5 per district)

In March 2022, CEFA implemented an educational program in 15 schools in the target districts of Diguna Fango, Kindo Koysha and Offa, specifically carrying out recreational-pedagogical workshops dedicated to raising awareness on crucial issues such as water and proper nutrition. The activity lasted 5 days for each of the districts involved and made it possible to bring the theme of the importance of the protection and correct use of water to the schools of some communities in those districts, particularly affected by the severe droughts of recent years with the creation of workshops which, thanks to the playful-pedagogical methodology, have raised students' awareness through activities and games that stimulate reflection and the search for solutions to the growing water shortage in their communities and the close relationship with the issue of food security.



**Workshop in a school in Diguna Fango District**  
(Picture by CEFA)

The activity actively involved principals, teachers and students, reaching a total of 180 participants, of which 100 men and 80 women. The meetings were held by adopting an interactive approach, which saw the use of visual tools such as thematic posters that illustrated the importance of water from different aspects: from its fundamental function in environmental sustainability to its correlation with food security.



**Workshop in a school in Kindo Koisha District**  
(Picture by CEFA)

Participants also had the opportunity to participate in guided tours and outdoor activities, with the aim of offering the possibility of a practical and tangible experience to better understand the water cycle and the challenges related to its sustainable management. During these activities, topics such as the causes of water pollution and strategies to mitigate its negative impacts on the environment and human health were addressed.



**Workshop in a school in Offa District**  
*(Picture by CEFA)*

A particular focus was placed on hygiene, with practical demonstrations that illustrated the importance of correct hand washing. This aspect has contributed to promoting fundamental hygiene behaviors for individual and collective health. CEFA staff conducted the workshops with an inclusive approach, encouraging active participation and stimulating students' critical thinking.

A second activity concerning Result 3 (A.3.2) was the elaboration of a guidance document containing the basic lines for the protection of water in arid and semi-arid contexts. This is a document whose objective is to raise awareness of good practices for the conservation of water resources, which can be adopted at family and community level and useful for spreading a culture of sustainable water, and raise awareness of the importance of water protection for food security in already arid and semi-arid contexts which are further exploited severely tested by the effects of climate change. Its presentation is very simple: clear words and many images have been used to explain the concepts so that it can be consulted by a large number of people.



**The guide created by Cefa on water conservation in arid and semi-arid contexts**  
*(Picture by CEFA)*

The guide, developed by the CEFA staff after consulting various sources on the topic, was written in Amharic and contains numerous contributions (slogans, drawings) coming from the children who participated in the recreational-pedagogical workshops mentioned in the previous paragraph (see activity 3.1). This approach not only helped make the guide more inclusive and participatory, but also reflects the community's commitment to promoting sustainable practices.

For the editorial staff, the contribution (phrases, drawings) of the children and young people from the schools involved in the program was also taken into consideration. 3000 prints of the document were made and distributed in communities, schools, civil society organizations and local

authorities and in all places where it constituted a useful working tool to consolidate the awareness-raising action on the sustainable management of water resources carried out by the project through the activity of workshops in schools and the celebration of World Water Day in the target districts.

Finally, a third activity linked to Result 3 (A.3.3) was the creation of an awareness event in each district capital for World Water Day with school children and the collaboration of the Woredas involved.

The first planned events were held on 22, 23 and 24 March 2022, respectively in the capitals of the Districts of Diguna Fango, Bitena Town, Kindo Koysha, Bale Town, and Offa, Gesuba.



**World Water Day in the capital of Kindo Koysha District, Bale Town**  
(Picture by CEFA)

These saw first of all the involvement of the highest local authorities (the District Administrators, the Heads of the Water and Energy Offices, the Heads of the Agriculture and Natural Resources Offices, the Heads of the Education Offices), in order to give visibility and importance to the topics covered . They were then joined by the teachers and students of the schools involved in the workshop activity.



**World Water Day in the capital of Offa District, Gesuba Town**  
(Picture by CEFA)

In particular, the students who took part in the workshops were entrusted with a leading role in carrying out the activities planned during the event days. These saw the creation of an intense program of games, skits, demonstrations and poetry readings (annexed) on the key themes of the day. The best entries by the students were then awarded by the CEFA staff together with the local authorities.



**Demonstration exercises during World Water Day in Diguna Fango**

*(Picture by CEFA)*

A total of 176 registered participants (96 men and 79 women) took part in the first three events. To these were then added over 2,000 participants, including students from the schools involved and members of the community who took part in the celebrations.

As foreseen by the project, a second round of events was also organized in 2023 to celebrate World Water Day in 2023. Specifically, on 22, 23 and 24 March the CEFA staff organized events at the primary schools of Sere Finchawa, Fango Damot and Dakaya, in the Kindo Koysha, Diguna Fango and Offa Districts respectively

With this event we wanted to reach the greatest number of citizens and raise awareness on the issue of water. The authorities of the area were invited and the guide document developed with activity A.3.2 was disseminated. 63 student members of school environmental protection clubs, 401 other students, 67 teachers, 69 heads of the District Education Offices and other local authorities and 30 representatives of the local communities participated in these event days, for a total of 630 people (256 women and 374 men). For the occasion, visibility materials were specially created, in which the contribution of the Presidency of the Council as donor to the project was highlighted. Students from all classes, from nine to fourteen years of age, participated in the initiative. In the previous days they had carried out reflection work on water issues in class together with their teachers, making use of the Guide on Water created by CEFA as part of the project (see activity 3.2). As was done during the first event days held in 2022, members of the environmental protection school clubs of the target schools used different teaching methodologies, such as poems, small theatrical performances, songs and hand washing demonstrations, to raise students' awareness of the importance of water. The key messages conveyed during these educational events were: *“Water is for everyone and is essential for washing, consumption, growing plants and raising animals, so every individual should take care of it”* and *“Without a proper personal hygiene and a clean environment, we will not be able to provide quality education, produce food, carry out economic activities and many other things will not be possible without water.”* The best three papers produced by the students received a school book as a prize from CEFA.



Edited by  
Marco D'Agostini

During the celebrations, the heads of the District Education Offices and the CEFA Project Manager gave speeches underlining the importance of conserving water and maintaining hygiene to ensure a healthy and sustainable life. They also encouraged participants to take the topics discussed seriously and to spread the knowledge gained during the event within their families and communities.

Below is a summary table of the participants in the event days:

	Student club members (F/M)		TOT		Other students (F/M)		TOT		Teachers (F/M)		TOT		Local Authorities (F/M)		TOT		Community representatives (F/M)		TOT		GENERAL TOTAL
<b>Kindo Koysha</b>	15	8	23	69	120	189	12	18	30	14	8	22	13	13							26
<b>Duguna Fango</b>	6	4	10	54	66	120	2	8	10	1	13	14	0	0							0
<b>Offa</b>	9	21	30	44	48	92	8	19	27	7	26	33	2	2							4
<b>TOTAL</b>	30	33	63	167	234	401	22	45	67	22	47	69	15	15							30
<b>Total of participants</b>			630																		
<b>F</b>			256																		
<b>M</b>			374																		

#### 4.5. Result 4 aimed at Strengthening the skills in nutrition and correct food preparation for a balanced diet of mothers

As regards result 4 (To Strengthen the skills in nutrition and correct food preparation for a balanced diet of 150 mothers in the involved districts), the number of the mothers involved was increased from 30 to 50 for each of the 3 districts in order to achieve the global number of 150 trained mothers.

Strengthening women's nutritional skills represents a significant step towards improving health and well-being in rural communities in the target districts. A result that was achieved by carrying out a combined action that involved the carrying out of studies, the development of information material and the conduct of both theoretical and practical training sessions.

Conducting an in-depth study on the food security of rural families in Wolaita provided a detailed picture of the nutritional challenges faced by these communities, creating the basis for targeted interventions.

A first activity (A.4.1) was the organization by WODA of a nutritional training workshop for 150 mothers from the 3 districts in order to pay specific attention to ensure a significant improvement in eating habits of families in rural communities.

More specifically, the activity involved the organization of a workshop in each of the three districts involved in the project. With the help of an expert nutritionist, the WODA staff developed a program tailored to the needs and abilities of the selected target group, in awareness of the key role played by women in taking care of their families' nutrition.

The three planned workshops were carried out by qualified technicians from the TVET (Technical and Vocational Education and Training) College of Soddo, touched on various topics, including the fundamental principles of correct nutrition, providing in-depth details on specific nutritional needs of the area and on the essential nutrients present in local foods. In June 2021, workshops were held in each District, lasting two days each: 16 and 17 in Kindo Koisha, 21 and 22 in Diguna Fango and 24 and 25 June in Offa District. The beneficiaries involved had the opportunity

to learn interactively about the causes and consequences of malnutrition, acquiring a concrete awareness of the negative impacts of the latter on health and development.

Below is a summary table containing the main information relating to the workshops carried out:

Districts	Date	Number of participants (Mothers)	Topics covered
Kindo Koyssha	16-17/06/2021	50	Principles for correct nutrition; Nutritional needs; Essential nutrients; Causes and consequences of malnutrition and strategies to avoid it
Diguna Fango	21-22/06/2021	50	
Offa	24-25/06/2021	50	
<b>TOTAL</b>		<b>150</b>	

The sessions were not limited to theory, but also provided practical strategies to combat malnutrition, encouraging the adoption of more conscious and sustainable dietary practices. The presence of specialized technicians guaranteed a personalized approach, adapted to the specificities of each community, thus creating a profound link between scientific knowledge and the daily reality of the women involved. In this way, the training laid the foundation for significant change, not only in individual health, but also in the entire dynamics of the communities involved.



**Nutritional training workshop**

(Picture by WODA)

The main objective of the training was to practically demonstrate nutritious food preparation technique from local available inputs of food. And by doing this to keep the growth of children’s healthy, to prevent their bodies from damage due to lack of food and to prevent them from migrating their surroundings due to hunger.



**Images of the workshops on nutritional themes in the districts of Duguna Fango and Kindo Koisha**

(Photo by WODA)



**Images of the workshop on nutritional issues in the Offa District**  
(Photo by WODA)

The workshop held dealt with the nutritional theme, touching on aspects such as the nutritional components of foods (fats, carbohydrates, proteins, fibre, etc.), a balanced diet, the properties of plants, to what extent to consume certain foods, the ideal weight of children and when they are at risk of malnutrition, hygiene standards, etc.

On the training event, trainers having a practical experience of preparing nutritious food from local available inputs were invited and shared their concrete experiences on preparation of sweet potato, Kocho and other local foods.

The experience gained by CEFA with work in rural communities has led to considering this type of training as a priority and essential for improving the quality of life and correct growth of children, who are those most at risk of malnutrition and undernourishment. In order to develop this activity in a professional way, the Project relied on the advice of an expert nutritionist. The beneficiaries were the mothers of the communities involved in the project, since normally they are responsible for feeding their family members and are endowed with greater responsibility and sensitivity towards this issue.

To materialize the theoretical part developed with activity A.4.1, a second activity carried out in the framework of Result 4 (A.4.2) was the organization of an intensive food preparation course for 3 groups of 50 mother for each District involved, for a total of 150 mothers. Fifty mothers who were selected from each district and a total of 150 mothers from three districts got the training at the Hotel & Tourism Department of Wolayita Sodo Polytechnic College.

Specifically, the WODA partner organized the planned intensive food preparation courses, making use of a recipe book created by CEFA as part of the project (see activity 4.3). The beneficiaries, divided by district, were gathered at three different times at the Hotel & Tourism Department of Wolaita of the Sodd Polytechnic College. The women, organized in groups of 50, worked for 3 consecutive days, alternating theoretical sessions with demonstrations and practical sessions, so as to make the activity more interactive and engaging.

Initially the courses focused on the causes of malnutrition and undernutrition; after which we focused on the good nutritional practices to be adopted, underlining the importance of a varied diet and the use of cooking techniques that preserve the nutrients in the food. Particular attention was paid to childhood malnutrition, the importance of a healthy diet for pregnant women and exclusive breastfeeding in the first 6 months of the child's life. Subsequently, practical sessions were held in which it was shown which foods would be best to cook to obtain a nutritious meal and the beneficiaries were shown how to cook such foods. The women were therefore involved in the actual preparation of the food.

In particular, the preparation of food focused on the presentation of the nutritional values of the sweet potato and on the different ways of preparing it. This tuber, which grows naturally in the area and which has excellent nutritional properties, could in fact significantly integrate the diet of the local population, who however are not used to consuming it. Precisely with the aim of promoting knowledge, and consequently consumption, of this food, CEFA has included an entire section

dedicated to this tuber in the aforementioned recipe book. In addition to the sweet potato, the courses covered the nutritional values and preparation methods of various vegetables, the broad bean and native plants such as enset (false banana). The latter, particularly widespread in the area, thrives even in drought conditions, thus ensuring the local population an important, although not very nutritious, source of food, even when the yields of other crops are scarce.

The diet in rural communities, in fact, is not varied at all, an aspect that contributes to the high levels of malnutrition. The course allowed the beneficiaries to learn different recipes and ways of cooking with easily available ingredients and thus improve the quality of their diet without the need to use greater economic resources.



**Food Preparation Training**

(Picture by WODA)

On the training event, trainers who had a practical experience of preparing nutritious food from local available inputs participated and shared their concrete experiences on preparation of sweet potato, Kocho and other local foods.

The organization of the courses was managed by the local partner WODA; while as regards the contents, we relied on a local expert specialized in nutritional issues, identified by WODA in collaboration with CEFA and the local authorities. All the activity was carried out in close collaboration with the latter, in order to ensure that the topics covered were consistent with the regional program for the fight against malnutrition.

Below is a summary table containing the main information relating to the intensive courses carried out:

District	Date	Topics covered	Number of participants (Mothers)
Kindo Koysha	March 20-22, 2023	<i>Theoretical session:</i> - causes of malnutrition - importance of a varied diet especially for pregnant women and infants	50
Offa	April, 22-24, 2023	<i>Practical session</i> <i>Workshop on correct cooking of the following foods: sweet potato, other tubers, bread and rice, vegetables (carrots, cabbage, turnip and different types of salad), broad beans and beans, eggs and kocho.</i>	50
Duguna Fango	May, 28-30, 2023		50

Finally, the third activity foreseen as part of Result 4 (A.4.3) was the development of a recipe book for a balanced diet using local products.



**Recipe book prepared by CEFA for a balanced diet with the use of local products**  
(Picture by CEFA)

At the end of the course referred to in activity A.4.2, between June and November 2022, the CEFA staff created and printed a recipe book for a balanced diet with the use of local products, containing different recipes and suggestions for varying the diet and using the ingredients according to their properties with the aim of facilitating the adoption of a balanced diet which involves the use of ingredients deriving almost exclusively from local production.

The document was distributed to the beneficiaries and other women in the communities during the intensive courses held between March and May 2023, as well as to local authorities in order to ensure the widest possible dissemination.

Also within this project component, a study was carried out on the food security of rural families in Wolaita, with the aim of evaluating the food security situation of families in the rural areas of the districts in which the project took place. The task of carrying out the study was entrusted to the consultancy firm "Merihun Fikiru Meja" which, between June and November 2022 conducted the research activities. The study was concluded in November 2022 and shared with CEFA and WODA, who were therefore able to integrate the results obtained through this study into the planning of subsequent project activities.

## 5. The Social and Economic Impact of activities carried out in framework of the Mighib La Hullum Project

### 5.1. The Monitoring activity of the Mighib La Hullum Project

As part of the Mighib La Hullum project, a monitoring system was structured by the Catholic Liaison Committee for a Civilization of Love (CCCA), supported by the CEFA project manager on site, by the project leader's desk and by the Ethiopian partner WODA. based on annual verification missions and through online meetings - which, following the COVID pandemic, have become an increasingly common way of working - to verify and fine-tune the progress of activities and related "milestones".

In this way it was possible to verify the progress of the works, any difficulties and delays and the measures to be put in place to deal with them and the detailed planning of the activities scheduled in the following months, with particular attention to the impact assessment, remaining the lead CEFA project leader responsible for planning and verifying expenses, reporting to the donor and requesting authorization for variations to the Project.

This analysis was therefore aimed at identifying useful evaluation elements both for the intrinsic purposes of the project (its efficiency and effectiveness; possible adaptations that might become appropriate during construction) and with a view to finding an intervention model to offer to community and replicable in other areas. Starting from the description of the physical, social and economic characteristics of the territory, we proceeded with a measurement of the project's implementation rate (achievement of the quantitative indices set for each action) and of the quantitative and qualitative objectives; indications were collected from the partners and beneficiaries, observations and proposals on the progress of the project and finally the acquisition of statistical and sample elements (questionnaires, interviews, photographic and audiovisual reports) on the impact on the territory and on the beneficiaries, the contribution of the partners to the creation of change and the effects of change that fall on the partners themselves, as well as the sustainability and lasting impact of the action on the context and stakeholders involved.

In the framework of the monitoring activity two visits took place in Wolaita by CCCA representative on 25-30 October 2021 and 20-26 November 2022, to collect data, pictures, videos and interviews to stakeholders belonging to all the 3 Districts concerned. A series of meetings was also organized with CEFA and WODA field operators during the aforementioned missions as well as frequent online meetings on the objectives and tools of the monitoring activities, verification of possible critical issues in the management of the forms prepared to collect the data from part of the organizers of each activity (through reports and registers).

In the framework of the first visit for the "Mighib La Hullum" Project, which took place between 25 and 30 October 2021, on Monday October 25, 2021, a meeting with the members of the CEFA Onlus staff took place in Soddo. In addition to the Coordinator of the Soddo office of CEFA and Head of the "Mighib La Hullum" Project at the time, Mr. Valerio Rizzo and Mr. Marco D'Agostini, of CCCA, Mr. Ashenafi Mathewos, Deputy Coordinator of the Soddo Office, Mr. Tabdu Yasin, Accountant of the Soddo Office, Ms. Meskerem Mekiso, field agent for the "Mighib La Hullum" projects in the Offa District, Mr. Tamru Elias, field agent for CEFA in the Kindo



The meeting in the CEFA offices in Soddo  
(M. D'Agostini)

Koisha District, and Mr. Beimnet Massebo, CEFA driver and collaborator were present.

After an introduction by Mr. Valerio Rizzo, Mr. Marco D'Agostini illustrated in general terms the monitoring and evaluation of the social impact of the projects objectives and tools and then moved on to the deepening of some specific cases based on experience of the first activities already started and of the forms prepared.



The meeting with WODA executives  
(M. D'Agostini)

The Director of WODA focused on the description of the objectives and activities of WODA as well as on the appreciation of the partnership established for several years with CEFA Onlus and CCCA.

The meeting then continued with the interventions of those present.

Mr. Desalegn Berssamo focused on the significant impact of the Employ project concluded together with CEFA Onlus, CCCA and other partners for some years but which continues to bear fruit, among other things, thanks to the revolving fund that allowed the financing of 20 cooperatives and subsequently, with its reconstitution, supported the start-up of new cooperatives, as well as foreshadowing new potential areas of cooperation.

Mr. Yohannes Lecha expressed his appreciation for the monitoring forms prepared by CCCA and confirmed his full willingness to collaborate for the implementation of this area.

Gizachew Samuel illustrated the progress of the project for the activities managed directly by WODA.

In conclusion, the Director of WODA, Mr. Assefa Nana, invited CCCA and CEFA Onlus to further develop the partnership with particular reference to the potential offered by the school for orphans managed by WODA, the Wolaitta Liqa School, and a project underway to be started in the new district. of Abala Abaya, originated from a division of the previous district of Humbo, and finally invited all present to a working lunch at the Guttara Congress Center managed by WODA in Soddo.

On Wednesday October 27 an in-depth meeting was also held at the WODA offices to carry out a summary of the implementation status of the Mighib La Hullum project for the part of the Ethiopian partner's responsibility.

The meeting was attended by Gizachew Samuel, project coordinator for WODA, and Habtamu Haile, WODA's manager of activities in the Kindo Koisha District. The meeting also provided an opportunity for a new meeting with WODA's Chief Executive, Assefa Nana.

As regards, in particular, the training aspects of the Mighib La Hullum project, the meeting made it possible to take stock, as well as on the state of realization of the seedbeds (action 1.4 of the project), a topic that was particularly studied

Subsequently, a meeting was held with the executives of the Wolaitta Development Association (WODA), the new Director (Chief Executive), Mr. Assefa Nana, the Program Manager Desalegn Berssamo, the Coordinator for WODA of the "Mighib La Hullum" Project, Mr. Gizachew Samuel, and the Head of WODA monitoring and evaluation Office, Mr. Yohannes Lecha.

During the meeting Mr. Valerio Rizzo thanked WODA for the collaboration offered to the project and Mr. Marco D'Agostini briefly illustrated the role of CCCA in the activities underway and the purposes of the monitoring operations and for the assessment of the social and economic project.



The meeting with WODA operators

(M. D'Agostini)

in depth during the visits to the respective sites, nutritional workshops for mothers (action 4.1) and intensive courses for food preparation (action 4.2).

The managers of WODA first of all reported on the selection criteria of the 150 mothers interested in the nutritional workshops to be carried out in each of the 3 Districts involved (Duguna fango, Kindo Koisha and Offa). In this regard, the competent offices of the District and Zone authorities (Women and Children Affair department) were involved by applying parameters referring to income and living conditions.



**Meeting with the Chief Executive of WODA, Assefa Nana**  
(M. D'Agostini)

On the afternoon of Thursday 28 October, a final meeting of the working group made up of Mr. Valerio Rizzo and Mr. Ashenafi Mathewos, for CEFA, and Mr. Marco D'Agostini, for CCCA, took place with the managers of WODA, the Director (Chief Executive), Mr. Assefa Nana, the WODA Delegate Manager for programs, Mr. Desalegn Berssamo, the coordinator for WODA of the "Mighib La Hullum" project, Mr. Gizachew Samuel, and the head of the monitoring and evaluation sector, Mr. Yohannes Lecha.

During the meeting, a summary was held of the results of the inspections carried out in the previous days in Project's sites in Diguna Fango, Kindo Koisha and Offa Districts, the progress of ongoing projects and the prospects for the development of collaboration with WODA in new possible sectors.



**The final meeting in Soddo with WODA executives**  
(M. D'Agostini)

As regards, in particular, the Mighib La Hullum project, the importance of a close link between the actions managed, respectively, by CEFA and WODA, and the transmission by WODA to CEFA and CCCA of the questionnaires completed by trainers was highlighted, and beneficiaries participating in the various activities for monitoring purposes.

As regards the seedbeds under construction by WODA, the need to evaluate long-term sustainability for each Green Farm was also stressed (possibly applying a price, albeit a subsidized one, to seeds and seedlings that will be distributed to farmers on the basis of their specific needs) and to identify irrigation systems based on renewable energies as experience has shown that diesel pumps, in addition to critical environmental profiles, risk being abandoned after the conclusion of the project due to lack of resources for the purchase of diesel.

The meeting was followed by a reception organized by WODA for the participants.

The program of the second visit for the "Mighib La Hullum" Project, which took place in Ethiopia between 20 and 26 November 2022, opened with a meeting with the members of the CEFA Onlus staff that took place in the CEFA premises in Soddo on Monday, November 21<sup>st</sup>, 2022.

The meeting was attended by Mr. Riccardo Andrea Rabita, CEFA Coordinator for Ethiopia, Ms. Eugenia Pacini, CEFA Coordinator for Programs in Ethiopia, Mr. Samuel, CEFA Logistic and Program Assistant for Ethiopia, Mr. Ashenafi Mathewos, new CEFA Coordinator of Soddo Office, Ms. Meskerem Mekiso, Mr. Tamru Elias and Mr. Wuletaw Girma, CEFA field agents for projects respectively in Offa, Kindo Koisha and Duguna Fango Districts, Mr. Sintayehu Sikle, Accountant of the Soddo CEFA Office, Mr. Marco D'Agostini, of Civilization of Love -CCCA, responsible for Project Monitoring, Mr. Roberto Saraceno of Atenatech SRL, consultant for the solar systems foreseen by the project and Mr. Luigi Facchin, expert in irrigation and electrical systems.

The meeting offered the opportunity for a mutual understanding of the members of the staff involved in the project, some of whom met for the first time, and for a global evaluation of the progress of the same.

On Thursday November 24<sup>th</sup> 2022 a final meeting of the working group made up of Mr. Riccardo Rabita and Ms. Eugenia Pacini for CEFA, Mr. Marco D'Agostini, of Civilization of Love -CCCA, Mr. Roberto Saraceno, and Mr. Luigi Facchin, took place with the managers of WODA, the Director (Chief Executive), Mr. Assefa Nana, the Manager for programs, Mr. Desalegn Berssamo, the Business Development Directorate Director Mr. Tesfaye Feleke Kassaye, the Coordinator for WODA of the "Mighib La Hullum" project, Mr. Gizachew Samuel, and the head of the monitoring and evaluation sector, Mr. Yohannes Lecha.



The meeting in the WODA headquarters with WODA Chief Executive Director, Mr. Assefa Nana in 2022  
(M. D'Agostini)

During the meeting, a summary was held of the results of the visit to Project' sites in in Diguna Fango, Kindo Koisha and Offa Districts, the progress of ongoing project and the prospects for the development of collaboration with WODA.

Mr. Assefa Nana, after noting how the long years of cooperation between WODA, CEFA and CCCA have consolidated the partnership between these organizations despite the rotation of several of their respective managers, underlined the potential of this cooperation also for the future. In this respect, he highlighted the importance of strong communication channels at all levels and outlined possible areas for further collaboration.

Mr. Riccardo Rabita agreed on the excellent quality of cooperation between the respective organizations, which made it possible to overcome the difficulties that arose also following emergencies such as the pandemic. Agreeing on the possibility of further progress in this partnership relationship, he underlined the need to pay particular attention to some operational aspects such as reporting, on which the trust of donor bodies depends, and care for the maintenance of the structures built with the projects.

Mr. Desalegn Berssamo expressed his appreciation for the active presence in the field, during the week, of the CEFA Coordinator for Ethiopia, Mr. Rabita, and for the continuity ensured over the years between the various projects by Mr. D'Agostini, attentions that denote, in addition to the commitment to mutual cooperation (which has allowed for strong capacity building), a spirit of solidarity.

Mr. D'Agostini thanked WODA for support and focused on some operational aspects inherent to the social impact of the projects such as the enhancement of the entrepreneurial spirit of the beneficiaries, the importance that a local organization like WODA can master new technologies such as irrigation drip (essential in the presence of growing drought problems) and solar energy without having to depend on external inputs and, to this end, the need to pay particular attention to training on technical maintenance.

Ms. Pacini underlined the need for the social impact of the projects not to end with their conclusion but to continue to produce its fruits even afterwards. To this end, she highlighted the role that belongs to WODA, as an organization that takes particular care of the living conditions of the Wolayta beneficiaries,

to ensure that they continue to improve in the future thanks to the initiatives that have been launched, such as the green farms, which can be considered a model to be developed further.

Mr Gizachew Samuel focused on the difficulties, such as the COVID pandemic, which have led to delays with respect to the time schedule, noted that the donor had authorized an 8-month postponement of the Project term and hoped for a consolidation of communication channels between WODA and CEFA.

Mr. Assefa Nana, after a brief further exchange of views, summarized the issues addressed and invited those present to a reception offered by WODA.

The monitoring visits to Ethiopia were also aimed at verifying the physical conditions of the sites, such as the distance and difference in height between the fields to be irrigated and the waterways (rivers, streams and canals), with the aim of identifying irrigation systems powered by solar energy best suited to each site, as well as visiting suppliers in Addis Ababa to acquire information on prices and technical characteristics of fixed and mobile pumps, photovoltaic panels, irrigation systems, inverters, accumulators and other devices available on the Ethiopian market for the construction and maintenance of irrigation systems powered by solar energy.

During the first mission in Ethiopia in the framework of the “Mighib La hullum Project”, in October 2021, the visits to the project’s sites in Diguna Fango, Kindo Koisha and Offa were also aimed to verify the technical and social feasibility of the hypothesis of installing one or more mobile solar pump systems in order to support irrigation in the demonstration plot for agricultural techniques created there.

For instance, during the visit to the village of Fango Damot, an inspection was also carried out to the land of about 10 hectares made available by the local authorities for the construction of the green farm envisaged by the project and the installation of the drip irrigation system powered by solar energy.



**An overview of the Bilate river that runs alongside the field to be irrigated**

In this regard, taking into account the financial constraints, it was decided to cover an area of about 2 hectares with the irrigation system under evaluation, overlooking the river Bilate, of which some videos have been made to help the technicians who are working on the design of the system to study the most suitable point for the water intake. In this regard, an average difference in height of about 5 meters was detected between the river bank, when it is not in flood, and the land where to install the pump, accumulators, inverters and solar panels.

In the aforementioned land there are also sections at a lower level but it is believed that they are not safe for the aforementioned installations because they risk being invaded by water during periodic floods. When searching for the location of the aforementioned installations, it would also be advisable to avoid damaging the crops already present in order to avoid complaints from local farmers. These considerations also contributed to the preference, for this site, for the installation of mobile solar pumps instead of a fixed solar system similar to the one designed for the Ampo Koisha site.

During the visit to the village of Borkoshe, a visit to the land of about 0.65 hectares placed at the disposal of the Project by the local authorities for the construction of the green farm envisaged by the project and the installation of the drip irrigation system from solar energy was also carried out. Some videos were also made of the Ongoto river that runs along the ground in order to help the technicians who are working on the design of the system to study the most suitable point for water intake. In this regard, an average height difference of about 6/7 meters was detected between the river bank and the land where the pump, accumulators, inverters and solar panels were installed.



The Ongoto River beside the cultivation field created for demonstration purposes in the Village of Borkoshe in the District of Kindo Koisha  
(M. D'Agostini)



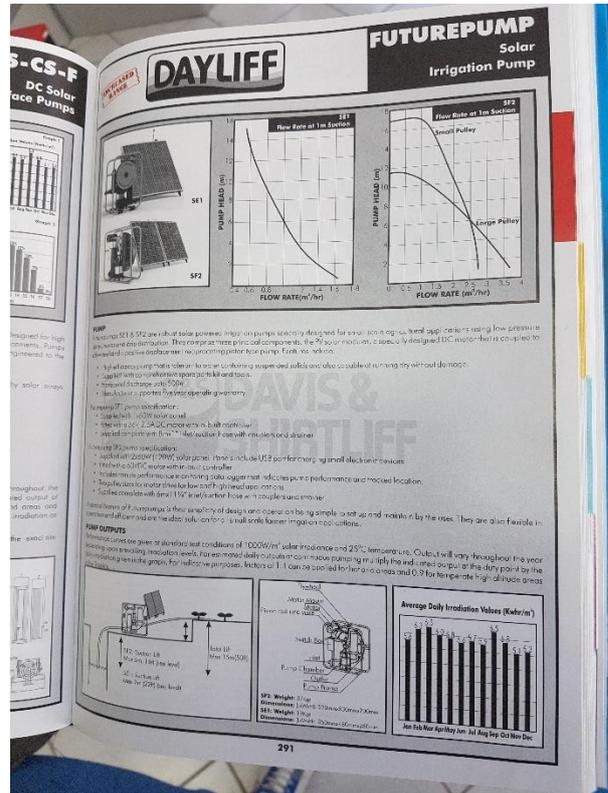
The existing irrigation channel at a distance of a few hundred meters from the cultivation field created for demonstration purposes in the Village of Borkoshe  
(M. D'Agostini)



An image of Addis Ababa  
(M. D'Agostini)

On Friday October 29<sup>th</sup> Marco D'Agostini drove to Addis Ababa accompanied by Valerio Rizzo, Project Manager, and Beimnet Massebo, driver and CEFA collaborator, to carry out the swab required by Ethiopian legislation for international travel during COVID pandemic. The trip to Addis Ababa offered the opportunity for a meeting with Riccardo Andrea Rabita, CEFA Coordinator for Ethiopia, who presented the premises recently acquired by CEFA for the headquarters in Addis Ababa and with whom an exchange of views on the results of the visit and the prospects for ongoing project.

On Saturday October 30<sup>th</sup>, before Marco D'Agostini's departure for Italy, the exchange of views continued with Valerio Rizzo and Riccardo Andrea Rabita on the progress of the projects and their prospects and a survey was carried out at some suppliers of Addis Ababa to check the models of irrigation pumps available on the local market.



**An image and technical specifications of a low-flow solar pump of the model available on the Addis Ababa market**  
*(M. D'Agostini)*

Even during the second mission in Ethiopia in the framework of the “Mighib La hullum Project”, in November 2022, the visits to the project’s sites in Diguna Fango, Kindo Koisha and Offa were also aimed to verify the technical and social feasibility of the hypothesis of installing one or more mobile solar pump systems in order to support irrigation.

On Tuesday November 22<sup>nd</sup> a working group made up of Mr. Rabita, CEFA, Ms. Eugenia Pacini, Mr. Samuel, Mr. Ashenafi Mathewos, and Mr. Wuletaw Girma for CEFA, Mr. Marco D'Agostini, of Civilization of Love -CCCA, Mr. Roberto Saraceno of Atenatech SRL, and Mr. Luigi Facchin, visited the the village of Fango Damot in Duguna Fango District accompanied by a WODA delegation composed of Mr. Desalegn Berssamo, WODA Program Manager, Mr. Gizachew Samuel, Coordinator for WODA of the "Mighib La Hullum " project, Mr. Yohannes Lecha ", Head of WODA monitoring and evaluation Office, and Mr. Korga Lambebo, WODA Site Coordinator for Duguna Fango.

The purpose of the visit was to carry out interviews with beneficiaries, trainers and operators of the activities carried out in the District within the Project, as well as to visit the sites selected for the installation of irrigation systems powered by solar energy.



**A view of the Bilate River overlooking the plot of land where the irrigation systems powered by solar energy will be installed**  
*(M. D'Agostini)*



**A view of the drought-parched plot of land where solar-powered irrigation systems are to be installed in Fango Damot Village in Duguna Fango District**  
*(M. D'Agostini)*

The plot of land made available by the local community for the demonstration irrigation systems powered by solar energy is inscribed in a rectangle about 120 meters deep, measured from the Bilate River

bank to the internal border, for a length of about 1 km, for a total of about 12 hectares owned by about 20 families.

The average height difference between the level of the Bilate river and the altitude of the fields to be cultivated is 7 metres.

The fields were evidently parched by the drought that has characterized the region in recent years and which, as reported by the subsequent interviews carried out with the farmers, has worsened the living conditions of the rural population. Families that already suffered from hunger when the rains were more regular, producing enough food to sustain themselves for only 8 out of 12 months, have seen their conditions further worsen to the point of producing, in many cases, food for less than six months year. Other, relatively more affluent families, which in the past had achieved satisfactory levels of food security, now find themselves without being able to produce enough food for their livelihoods.

In this perspective, the visit confirmed the need to proceed with a redefinition of the irrigation systems initially designed.

In fact, for this area the construction of a drip irrigation system powered by fix solar panels had initially been hypothesized which, given the technical and budgetary constraints (need to install a sufficiently powerful pump to guarantee the pressure required for drip irrigation, guaranteeing a constant power flow through the addition of energy accumulators to the solar panels), could not have guaranteed coverage of all the fields but only about 20% of the land made available for the demonstration plant.

A more in-depth analysis of the physical structure of the territory and of the social organization of the community that is linked to it led instead to consider a solution that would allow an extension of the number of beneficiaries.

In fact, it was estimated that, at an equivalent cost, the installation of a system of fixed pumps powered by solar panels and accumulators, which would benefit a smaller number of owners, could be replaced by a system of mobile pumps which, with suitable rotation criteria, could benefit all the owners of the fields of the area concerned.

On Wednesday November 23<sup>rd</sup> a working group made up of Mr. Riccardo Rabita, CEFA, Ms. Eugenia Pacini, Mr. Samuel, Mr. Ashenafi Mathewos, and Ms. Meskerem Mekiso for CEFA, Mr. Marco D'Agostini, of Civilization of Love -CCCA, Mr. Roberto Saraceno of Atenatech SRL, and Mr. Luigi Facchin, visited the the Offa District of Wolayta Zone.

The purpose of the visit, on the one hand, was to verify, on farms that are not part of the project, the functioning of various types of mobile solar pumps in order to evaluate the feasibility of their use also in the context of the "Mighib La Hullum Project" and, on the other hand, to carry out interviews with beneficiaries, trainers and operators of the activities carried out within the Project in the Village of Woshiwocha Dakaya, as well as to visit the sites selected for the installation of irrigation systems powered by solar energy.



The Futurepump SF2 in the farm of Sholla Village  
(M. D'Agostini)



The pipeline from the pump to the fields  
(M. D'Agostini)

We therefore visited a farm in the Village of Sholla where a "Futurepump SF2" model mobile solar pump works which has a peak power of 60 Watts, guarantees a maximum suction depth of 7 meters and a lifting capacity of up to a further 8 meters, thus covering a maximum height difference of 15 meters. The Futurepump of Sholla was powered by two solar panels of 60 watts each for a total power of 120

watts and it is located 3 meters above the river level and it is irrigating an area of about 1.5 hectares, up to a distance of 50 meters, divided into 3 sectors in which irrigation shifts alternate, with an actual flow of about 0.4 liters per second (The theoretical maximum flow indicated by the pump instructions is one liter per second)<sup>21</sup>



**The capture point of the water sucked in by the pump**  
(M. D'Agostini)



**The field irrigated by the solar pump**  
(M. D'Agostini)

The field irrigated by the futurepump in the farm of Sholla Village produces mais, cassava, teff, beans and other vegetables.

The aforementioned working group then visited a farm in the village of Adata Dakaya to verify the operation of a different pump model, a SunCulture submersible pump with a power of 500 Watts.



**The SunCulture submersible pump of Adata Dakaya Village farm**  
(M. D'Agostini)

The SunCulture pump is powered by two 310-watt solar panels mounted on the roof of a shack. The pump pushes the water up to the fields at a higher altitude of about 8 meters and about 100 meters away from the river.

It irrigates in rotation, with a flow between 0.6 and 0.72 liters per second, approximately 2.5 hectares of land cultivated with wheat, tomatoes, cabbage and other vegetables.

The farm of Adata Dakaya also includes a further 0.5 hectares of cassava which, however, is not irrigated by the aforementioned pump.

While appreciating the greater power guaranteed by a submersible pump such as the SunCulture pump, it was nevertheless assessed that a suction pump such as the Futurepump model could ensure greater versatility, given the irregular flow rate of the rivers facing the sites involved in the "Mighib La Hullum" Project, which may not provide sufficient depth for the use of submersible pumps in dry seasons.

<sup>21</sup> See website: <https://futurepump.com/solar-water-pump-datasheet-sf2/>



The water pipe from the river to the shack on whose roof solar panels are installed  
(M. D'Agostini)



The fields irrigated by the SunCulture pump  
(M. D'Agostini)

Finally, the aforementioned working group carried out an inspection at the site (made available for the demonstration plant by the local authorities in agreement with the owner) in which the installation of an irrigation system powered by solar energy had been hypothesized, confirming the orientation to use one or more mobile pumps instead of a fixed pump powered by solar panels anchored to the ground. This solution would in fact allow for a rotation with other neighboring sites, expanding the number of final beneficiaries. A fixed system would also risk being damaged by the floods of the Zega River, which runs alongside the site, and which sometimes, in the rainy season, overflows and inundates the fields.



A view of Zega River that runs alongside the site where the training took place in Woshiwocha Dakaya Village  
(M. D'Agostini)



From left Mr. Mathewos, Ms. Pacini, Ms Mekiso, Mr.Rabita, Mr. Facchin and Mr. Saraceno, during the inspection of one of the site where the installation of an irrigation system powered by solar energy had been hypothesized in Woshiwocha Dakaya Village  
(M. D'Agostini)

On Saturday, November 26<sup>th</sup> 2022, a working group made up of Ms. Eugenia Pacini, Mr. Marco D'Agostini and Mr. Roberto Saraceno went to some suppliers in Addis Ababa to acquire preliminary information on the devices to be purchased for irrigation systems, necessary to define the orders.

Following the inspection in the previous days at the project sites, the orientation emerged to confirm the acquisition (in a number to be defined in relation to the available resources) of mobile solar pumps of the "Future Pump SF2" model for the sites of Kindo Koisha, Duguna Fango and Offa and to proceed with the reactivation of a drip irrigation system powered by solar panels for the WODA training farm for Ampo Koisha.

With regard to the monitoring of the Project, a system has also been set up for the digital collection of interviews (using mobile phones, tablets or PCs) also by the partner operators on the

living conditions and the degree of interest and satisfaction of the beneficiaries which, combined with the results of the interviews collected by CCCA during the missions, made it possible to have a very useful statistical case study in view of the Final Report on the social and economic impact of the Project

## **5.2. The interviews in the District of Diguna Fango**

During the aforementioned monitoring visits carried out in the Districts affected by the "Mighib La Hullum" Project, Diguna Fango, Kindo Koisha and Offa, we met and interviewed trainers and beneficiaries involved in the various training activities.

As regards the Diguna Fango District, in the village of Fango Damot we interviewed Mr. Henok Baza, an agricultural expert from the Duguna Fango District, who participates as a trainer in training activities, engaged in the theoretical and practical demonstration for local farmers of the construction of compost tanks.

He reported us that the activity is divided into two days, the first dedicated to theoretical training and the second, in progress, in the field at the moment of the interview, to the practical realization, with the excavation of three pits, where the collected and layered materials will be periodically transferred. The transfer of the material will allow its oxygenation and transformation into natural fertilizer within about three months.

The farmers were then involved in the collection of natural material (grass and green foliage of various kinds, dry foliage, bark, manure, ash and earth) moistened and superimposed in several layers in repetition, until the first pit was filled.

Henok Baza also told us that 30 farmers, 20 men and 10 women, belonging to the two neighboring villages of Fango Damot and Fango Sore participated with satisfaction in the activity aware of the importance of acquiring a technique that they will be able to replicate in their



**Henok Baza, agriculture expert from the Duguna Fango District**

*(M. D'Agostini)*

respective fields, which will allow them to have natural fertilizer in an economic way, compared to the chemical fertilizer which instead requires a sacrifice for its financial costs, and which will allow an increase in the respective production. This natural fertilizer is also more effective over time than chemical fertilizer because it has more lasting effects while the chemical fertilizer disperses into the soil more quickly.

The Project also provides for the carrying out of other training activities on agricultural production techniques on aspects such as rotation, spacing, horticulture and the cultivation of cereals and fruit trees.



**Mrs Sildide Sitota, from the village of Fango Damot**  
(M. D'Agostini)

We then interviewed Mrs. Sildide Sitota, from the village of Fango Damot, a widow with 9 children, of which three are self-sufficient (two are military and one works in Awasa) and 6 are dependent on her.

Ms. Sildide has approximately 0.75 hectares of land, mainly intended for the production of corn, sweet potatoes and beans.

The harvest is mainly intended for self-consumption, as the production is not even sufficient to feed the family: when it is good, the crops provide food for 7 months out of 12. The other months help from other family members take over.

Mrs. Sitota participates in these training activities with the hope that they will help her increase domestic production in the future. starting with the production of natural fertilizer from compost, just learned

We also interviewed Mr. Gatiso Bukato, from the village of Fango Sore, who has about 1.5 hectares of land that he works with his wife and with whom he also has to feed 5 children.

Mr. Gatiso mainly produces corn, beans, green beans and other legumes. When the rains are regular, he manages to obtain two crops by securing food for the family and by selling a part of the corn harvested with an average profit of 4000 birr (about 74 euros), which is used for seeds and small purchases, such as school books for children.

However, the growing irregularity of the rains puts this balance at risk and he hopes that the training just started will help him to boost the harvest..



**Mr. Gatiso Bukato, from the village of Fango Sore**  
(M. D'Agostini)



**Mr. Tesfaye Tantasa, in the village of Fango Damot**  
(M. D'Agostini)

Mr. Tesfaye Tantasa, age 38, from the village of Fango Damot, has about 2 hectares of land that he works with his wife and with whom he also has to feed 6 children.

He attended 16 days of training on the creation of seedbeds in Fango Damot during which he told us that he learned important concepts on aspects such as sowing and cultivating seedlings, creating compost from natural elements, growing fruit and vegetables and rationalization of the use of water for irrigation.

Mr. Tantasa also told us that, prior to the course, his family suffered from serious food safety problems due to the irregularity of the rains but, following the course, he introduced some innovations on his farm including the cultivation of avocado, mango, coffee and papaya.

In addition, learning how to make compost will allow him to save around 3800 Ethiopian birr a year (about 70 euros), which is a significant amount for his family.

Mrs. Fekedeca Nigato, age 25, from the same village of Fango Damot, has about 1,5 hectares of land that she works with her husband and with whom she also has to feed 1 child.

Her family also had food safety problems prior to taking the course on creating and managing a nursery. The training allowed her to improve the preparation of the land and the mango and corn cultivation techniques as well as to learn useful notions for more effective access to the markets.

Before the training she was forced to integrate her income with small itinerant trade activities, from which she used to receive about 20 Ethiopian birr (about 40 euro cents) a month. Now she produces enough food for her family and she has also managed to buy some clothes.



**Mrs. Fekedeca Nigato, age 25, from the village of Fango Damot**  
(M. D'Agostini)

Mr. Oroba Irboro, age 52, from the village of Fango Damot, has about 2 hectares of land that he works with his wife and with whom he also has to feed 6 children.

He told us that until about 4 years ago the regularity of the rains made it possible to predict up to two or three harvests per year with which he was able to feed the family and sell the products not used for self-consumption, obtaining an average of about 2000 birr (about 35 euros) a year.

Now, however, the reduction in rainfall has led to a severe drought for which his crops are able to feed his family for barely 4 months of the year.



Mr. Oroba Irboro, from the village of Fango Damot  
(M. D'Agostini)

Mr. Irboro attended 4 days of training on agricultural techniques. He then told us that from the training he learned useful notions to improve working and living conditions such as the possibility of realizing synergies with other farmers and the importance of protecting the soil from drought with green plants that reduce the aridity resulting from drought.

Mr. Irboro also told us that the natural composting preparation he has learned could save him up to 3,500 birr (about 61 euros) a year from eliminating the need to buy chemical fertilizers and that, thanks to learning the cultivation techniques of new vegetable varieties, he will be able to evaluate the possibility of variegating production, for example, integrating or replacing the traditional production of mangoes with other species, such as bananas.



Mr. Macha Lamma, a farmer of Fango Damot Village  
(M. D'Agostini)



An example of the training on soil protection from drought: on the left Mr. Lamma's land left fallow, on the right the land protected with green plants which has kept part of its fertility  
(M. D'Agostini)

Mr. Macha Lamma, age 70, from the village of Fango Damot, has about 3 hectares of land that he works with his wife and with whom he also has to feed 5 children.

He told us that, up until 3 or 4 years ago, he was growing and selling enough mais, beans and other vegetables to feed his family community - which at the time also included 6 further sons and daughters, who later got married and went to live in other areas - and he also used to earn about 3,400 birr (about 59 euros) a year. Currently the drought has forced him to leave a part of the land at his disposal uncultivated and he is no longer able to feed his family for more than 6 or 7 months a year.

Like other beneficiaries, he attended 4 days of training on agricultural techniques.

Mr. Macha Lamma then showed us the effects of applying the training on soil protection from drought on his farm. As can be seen from the photo, the land left completely uncultivated has resulted totally dried up by drought while the land protected with drought-resistant green plants has maintained part of its fertility pending the return of the rainy season, when it will be more receptive for sowing compared to land left totally uncultivated.

Moreover, the preparation of the compost will allow him to save around 900 birr (about 16 euros) a year on chemical fertilizers.

During the visits to Diguna Fango we also visited the seedbed for the Green Farm Nursery set up by the technicians of WODA in collaboration with the technicians of the Diguna Fango District in the same village of Fango Damot.



**Mr. Desalegn Berssamo, WODA Program Manager, Mr. Gizachew Samuel, Coordinator for WODA of the "Mighib La Hullum " projects, Mr. Korga Lambebo, WODA Site Coordinator for Duguna Fango District and a group of workers and beneficiaries of the training on nursery in Fango Damot Village**  
(M. D'Agostini)

WODA managers, Gizachew Samuel, project coordinator for WODA, and Yohannes Lecha, responsible for monitoring activities, explained to us that the seedbed will be used both for the production of fruit plants, such as mango, banana and avocado, and for vegetable seeds.

WODA staff also informed us that they planned to spray the seedbed with the waters of the nearby Bilate river using the installation of a diesel pump. In this regard, with the CEFA representatives we observed that it appears more consistent with the objectives and actions of the project to connect the seedbed to the irrigation system powered by solar energy which does not require the expense of purchasing diesel.



**Mr. Korga Lambebo, WODA Site Coordinator for Duguna Fango District activities**  
(M. D'Agostini)

Mr. Korga Lambebo, WODA Site Coordinator for Duguna Fango District activities, told us that, during the construction of the Fango Damot nursery, around 100 beneficiary farmers were involved in cascades, 10 of whom participated directly in the works, each of them committing himself to transmit, in turn, the techniques learned to 10 other peasant neighbors.

During the training, various agricultural materials, watering cans, other tools as well as 20 avocado, papaya, mango, coffee, gravellea and acacia seedlings were distributed to all 100 beneficiary farmers involved.

This is a project that has had a very positive impact on the local people who are suffering from worsening food conditions due to the severe drought in the area.

Before the end of the project, the sowing of new plant varieties is foreseen in the nursery that has been set up.

The farmers of the area will therefore benefit not only from training on the cultivation of these new varieties, but also from the distribution of the seedlings that will be produced there.

As for the beneficiaries of the initiative, WODA managers told us that the seeds and seedlings produced by the nursery could be sufficient for a community of about 300 families. In this regard, we discussed about the need to evaluate whether to provide free distribution of the seedlings or proceed with their sale, albeit at subsidized price, suitable to cover the management costs of the seedbed (at least one guardian / worker plus the costs for the purchase of seeds ) in order to ensure its long-term sustainability even after the conclusion of the project.

As already highlighted in the visit of the nurseries of other Green Farms, we suggested creating an actual business plan for the seedbed created in, estimating the quantity of different varieties of seedlings produced during the year and their respective market value. After the end of the project, during which the free distribution of the seedlings produced by the nursery to the beneficiary farmers of the area is envisaged, the sale of the seedlings produced in the following years could in fact give rise to the birth of a specific micro-enterprise - in form of a cooperative, a farmers' association or other legal form - suitable for creating employment and strengthening the social impact of the Project itself.



**An overview of the seedbed of Duguna Ofa Galacha**  
(M. D'Agostini)

Subsequently, we visited the Village of Duguna Ofa Galacha, in the same District of Duguna Fango, where a second seedbed is under construction, the characteristics of which were illustrated by the site manager on behalf of WODA, Korga Lambebu.

The site, at a distance of about 45 minutes by car on an unpaved road from the previous one, has fewer synergies with the aforementioned farm under construction in the village of Fango Damot and is added to a larger seedbed built by the Regional Center for Research Agraria of Areka.

Its products could benefit about 500 families living in the area but we discussed about the need to verify, for sustainability purposes, the costs for irrigation (these are the so-called "High Lands", more distant from rivers) and the identification of a price which, while meeting the need to support the already difficult conditions of local farmers, allows to cover at least partially the management costs. During the visit it was also possible to consider the risk that, once the project is finished, the seedbed will be abandoned due to the lack of adequate resources to cover its management costs, unless specific commitments are made by the District authorities, which aim to support the presence of a seedbed in the area.

### ***5.3. The interviews in the District of Kindo Koysa***

Even during the visits carried out in the Districts of Kindo Koysa we met and interviewed trainers and beneficiaries involved in the various training activities..



**Deglefu Wara, agriculture expert from the Kindo Koisha District**

*(M. D'Agostini)*

Mrs. Tamenech Kebede, from the village of Sere Fenchawa, aged 20, with her husband who works in another region and a young son, has about 0.25 hectares of land, mainly intended for the production of cassava, sweet potatoes, coffee, enset (false banana), corn, teff, spices and various vegetables.

In this regard, it should be remembered that enset is a very poor plant, similar to banana tree but which does not produce bananas, which also grows in situations of scarcity of water, of which the farmers eat the bark (left to ferment for two weeks) when everything the rest fails.

Mrs. Tamenech's harvest is mainly intended for self-consumption, as the production is not even sufficient to feed the family (the crops provide food for 5 to 9 months out of 12). The other months are replaced by her husband's remittances and small business activities along the country roads with the purchase and sale of agricultural products.

Mrs. Tamenech declared herself very interested both in the ongoing activities on agricultural training, with a view to increasing family production by also producing compost on her own, and in possible future training activities on the organization and operation of cooperatives.

In particular, in the village of Borkoshe, we interviewed some participants in the training activities underway for the preparation of compost, on the same site where the Green Farm was going to be built.

We interviewed, among others, Mr. Deglefu Wara, aged 49, an agricultural expert from the Kindo Koisha District who participates as a trainer in training activities, engaged in the theoretical and practical demonstration for the farmers involved, of the construction of tanks for the preparation of compost.

Mr. Deglefu told us that 30 farmers, 20 men and 10 women, participate with satisfaction in the activity, aware that with the techniques they have acquired they will be able to increase the fertility of their respective lands.



**Mrs. Tamenech Kebede, from the village of Sere Fenchawa**

*(M. D'Agostini)*



**Mr. Lema Jorge, from the village of Borkoshe**  
(M. D'Agostini)

We therefore also interviewed Mr. Lema Jorge, 35, from the village of Borkoshe, who has about 0.5 hectares of land that he works with his wife and with whom he also has to feed 4 children.

Mr. Lema mainly produces corn, beans, cassava, taro, teff, beans, green beans and other products. The harvest is intended for self-consumption, as the production is not even sufficient to feed the family (crops provide food for 4 to 7 months out of 12). In the remaining months he carries out occasional work, also in support of other farms.

Mr. Lema expressed an interest in the training in progress, wanting to learn how to produce compost for his land, but also in other possible training initiatives on the cultivation of vegetables



**Mr. Beyene Gutte, from the village of Borkoshe**  
(M. D'Agostini)

We also interviewed Mr. Beyene Gutte, age 42, from the village of Borkoshe, who has about 0.25 hectares of land that he works with his wife and with whom he also has to feed 5 children.

The harvest he produced before the project was intended for self-consumption, as the production is not even sufficient to feed the family harvest (crops used to provide food only for 5 months out of 12). In the remaining months he carries out occasional work, also in support of other farms.

Thanks to the seedlings and the training received as part of the project, he plans to create his own seedbed and increase production in order to strengthen the food security of his family unit and also generate financial income, with an overall improvement in living conditions.

Mrs. Addis Amaru, age 35, from the village of Borkoshe, has about 1 hectare of land that she works with her husband and with whom she also has to feed 6 children.

Before the project she produced mainly maize, part of which was intended for sale, and harvest provided food only for 6 months out of 12.

The training allowed her to learn techniques useful for activities such as optimizing the use of seeds, soil preparation and preparing compost, which will allow her to increase production and improve the living conditions of her family.



**Mrs. Addis Amaru, from the village of Borkoshe**

(M. D'Agostini)

We interviewed also Mr. Tamru Elias, CEFA field agent for the Project in the Kindo Koi-sha District, who told us that 150 farmers benefited (50 men and 100 women) from the training organized by CEFA in the District on good agriculture practices (GAP), such as compost preparation and soil protection.

In particular, Mr. Tamru explained to us, among other things, that training on the preparation of compost with natural elements allows farmers to save up to 5000 bir a year (about 90 euro) on the purchase of chemical fertilizers.



**Mr. Tamru Elias, CEFA field agent for the Project in the Kindo Koi-sha District**  
(M. D'Agostini)

This is a very significant figure for the family economy of households who often fail to obtain even one euro from their harvest, mainly intended for self-subsistence.



**A group of farmers beneficiaries of Training in Borkoshe**  
(M. D'Agostini)



**Mr. Tesgen Bekele, from the village of Borkoshe**  
(M. D'Agostini)

Mr. Tesgen Bekele, age 32, from the village of Borkoshe, has about 0.5 hectares of land that he works with his wife and with whom he also has to feed 5 children. He produces on his land varieties such as corn, teff, haricot bean and sweet potatoes which are just enough to feed his family but he cannot produce enough to sell even at the market.

Mr. Tesgen told us that, following the training, he started producing his own compost with natural elements and consequently significant savings on the purchase of chemical fertilizers. He also learned the techniques of covering the ground in the dry season, preserving its erosion and safeguarding its fertility in view of subsequent sowing.

Innovations like these have allowed him, on the one hand, to save financial resources and, on the other, to increase agricultural production, with the consequent improvement of the living conditions of his family unit.

Mrs. Workenesh Mega, age 20, from the village of Borkoshe, has about 0,5 hectare of land that she works with her husband and with whom she also has to feed 5 children.

Her harvest provided food for her family only for 5 months out of 12.

Mrs. Workenesh at the time of the interview had attended 2 days course on natural compost production, 2 days training on good agriculture practices (GAP) and she believed that the concepts she has learned would allow her to improve the living conditions of her family.



**Mrs. Workenesh Mega, from the village of Borkoshe**  
(M. D'Agostini)



**Mrs. Abaynesh Chinasho in the Village of Sere Finchawa**  
(M. D'Agostini)

Mr. Wondimagegn Lea Buche lives in Sere Finchawa and with his wife have to feed 5 children. They have an annual income of about 60,000 Ethiopian birr (around 1000 euros) and suffer from food security problems for up to 4 months out of 12.

Ha also attended training on GAP, and expressed an high degree of satisfaction about the training activities he participated in.

In the Village of Sere Finchawa we interviewed Mrs. Abaynesh Chinasho, who, together with her husband have to feed 5 children. They have an annual income of less than 30,000 Ethiopian birr (about 510 euros) and suffer from food security problems for up to 4 months out of 12.

She attended training on good agriculture practices (GAP).

She reported she was happy because the training she participated in increased her income and improved her family's living conditions.



**Mr. Wondimagegn Lea Buche**  
(M. D'Agostini)



**Mrs. Amarech Alemayehu, member of the Sure Finchawa  
“Gibirinna Sirana Gibyt” Cooperative**  
*(M. D’Agostini)*

Mrs. Amarech Alemayehu, living in the Sere Finchawa Village, together with her husband, have to feed 5 children. They have an annual income of less than 30,000 Ethiopian birr (about 510 euros) and suffer from food security problems 3 months out of 12.

She specified she appreciated the training she participated in because she increased her income and improved her family’s living conditions.

By using compost produced with natural materials instead of purchasing chemical fertilizers, she saved 1120 birr (around 19 euros).



**Mrs. Aiane Yotta (left) and Mrs. Alamitu Asha (right), in  
the Village of Sere Finchawa, Kindo Koisha District, showing  
us the effects of implementation of the lessons learned  
during the training on agricultural production such as  
maize and taro.**

*(M. D’Agostini)*

After the interviews with the farmers of Sere Finchawa, in Kindo Koisha District, we visited the farms of Mrs. Aiane Yotta and Mrs. Alamitu Asha, in the same Village of Sere Finchawa, who showed us the effects of implementation of the lessons learned during the training on agricultural production such as maize and taro. In fact, they have started to produce and use compost on their own, also applying the techniques for protecting the soil from drought learned during the training.

Covering the soil with grass and foliage during the dry seasons prevented excessive drying out of the land, which otherwise would have suffered erosion, progressively reducing the extension of the already limited arable land. The use of compost also allowed the production of more luxuriant plants, of which we were able to verify the difference, having kept the aforementioned farmers, for demonstration purposes, small plots cultivated with traditional methods, without the use of compost and soil protection techniques.

In the village of Borkoshe we visited also the nursery created by the Ethiopian partner WODA in the framework of the local Green Farm and we interviewed Mr. Tariku Thomas, WODA Field Coordinator.

Mr. Thomas told us that the seedbed created there, of about 1600 square meters, involved about 150 local farmers, of which 70 per cent men and 30 per cent women, for an overall training period of about 30 days, on topics such as soil preparation, planting, preparing compost for soil fertilization, watering and seedling breeding.

The production of seedlings involved both plant species recommended by the Department of Agriculture to combat soil erosion, such as gravellea, and fruit trees, such as



Mr. Tariku Thomas, WODA Field Coordinator in Borkoshe Village  
(M. D'Agostini)

avocado and mango, and other species useful for food and trade, like coffee and moringa.

At the end of the first production cycle, a set of 5-10 seedlings for each variety produced was distributed to each farmer participating in the project.

The aforementioned seedlings, together with the training course attended, allowed each beneficiary to reproduce small nurseries in their respective cultivation field.

For the first production cycle, 17.5 kg of seeds were used which gave rise to approximately 450 kg of product with the first harvest. Before the end of the project, new production cycles were planned for species such as bananas, avocados, papayas and mangoes.



Mr. Gizachew Samuel, Project Coordinator for WODA  
(M. D'Agostini)

With Mr. Gizachew Samuel, Project Coordinator for WODA, we also addressed the issue of future sustainability of the nursery built at Borkoshe in the District of Kindo Koisha.

Mr Gizachew explained to us that the main impact of the seedbed is the possibility offered to the beneficiaries to replicate the creation of seedbeds on their respective lands thanks to the training and the seedlings received.

As already highlighted in previous visits, we suggested creating an effective business plan for the nursery created in Borkoshe, estimating the quantity of different varieties of seedlings produced during the year and their respective market value.

The value of the seedlings produced in the nursery, even in the case of their sale at reduced prices to the farmers of the surrounding communities, could in fact form the basis for assessing the sustainability of a micro-enterprise made up of the workers in the nursery itself.

During the inspection in Kindo Koisha District we visited also a second seed nursery to be prepared by WODA in the village of Molticho in the same district

Again, the distance (about 30 minutes by car on an unpaved road) from the previous site allows less synergies with the aforementioned farm under construction in the village of Borkoshe. We discussed therefore the need to verify the type of seeds and seedlings requested by the farmers of the area (through specific interviews to be documented, in addition to contacts with the competent offices of the District authorities) and the identification of a price, albeit facilitated, that ensures sufficient income to the seedbed to ensure its sustainability over time.



**The seed nursery in the Molticho Village**  
(M. D'Agostini)

The seed nursery was in fact being set up on the same site as a seedbed already built in the past by the local authorities and then abandoned due to the presumed impossibility of covering the management costs.

The seedbed was however adjacent to the Boliya River from which a water withdrawal system based on a small portable solar pump could be envisaged.



**An image of the Boliya River that runs alongside the Molticho seedbed**  
(M. D'Agostini)

#### **5.4. The interviews in the District of Offa**

During the inspections to the District of Offa we interviewed beneficiaries, trainers and operators of the activities carried out within the Mighib La Hullum Project there as well as we visited the sites selected for the installation of irrigation systems powered by solar energy.

In the village of Woshiwocha Dakaya, in the District of Offa, we interviewed some participants in the training activities underway for the preparation of compost.

In this case the compost, instead of being made with the technique of layering natural materials (grass and green foliage, dry foliage and bark, manure, ash and earth) in a pit - to then be transferred, for oxygenation, to other pit - was prepared by layering the material in a sort of wooden "cage", also made with posts made from natural materials, such as branches, collected in the surroundings.



**A moment of training, in the village of Woshiwocha Dakaya for the preparation of compost with the stratification method in the wooden cage**  
(M. D'Agostini)



**Mr. Abbot Alaro and his wife Mrs. Belanynesh Lencha**  
(M. D'Agostini)

Unlike many other farmers interviewed, Mr. Abate produces more for the market than for self-consumption, with an annual income between 25,000 (463 euros) and 47,000 birr (870 euros). He is very interested in the project both for training like the one in progress (which will allow him to produce natural fertilizer on his own) and for the restoration of the possibility of irrigation.

We also interviewed Mr. Ergano Molla, age 41, from the same village of Woshiwocha Dakaya, who has about 1 hectare of land, which he works with his wife; they have also to feed 7 children, three of whom are older and they help cultivate the land.

Mr. Ergano mainly produces beans, cassava, corn, teff, taro and sweet potatoes. He does not produce vegetables due to lack of water.

Mr. Ergano sells part of the production (especially cassava) for various needs, in particular the books for the children's school and clothes, with a revenue of about 3000 birr a year (equal to about 55 euros), but what he produces is sufficient to cover the food needs of the family for only 4 months out of 12.

He was very interested in the ongoing training, in the hope that it will help him increase production.



**Mr. Ergano Molla, from the village of Woshiwocha Dakaya**  
(M. D'Agostini)

Mr. Abate Alaro, has 1.25 hectares which he cultivates with his wife Belanynesh Lencha and his eldest son Admasu while two other minor children go to school.

Mr. Abate, before the start of the project used to grow cassava, corn, bananas, sweet potatoes, beans and other vegetables. He suspended the cultivation of vegetables, which were more profitable, after the breakdown of the diesel pump he had, as they need a lot of water.

Cassava, which he is currently growing, has the same price of vegetables as onion (about 35 birr per kilo) but is harvested every three years, so with a much lower yield.



**Mrs Abebech Toga, from the village of Woshiwocha Dakaya**  
(M. D'Agostini)

chemical fertilizers, on the other hand, cost a lot and do not last long.

Mr. Aissa Afamu, is a farmer from the village of Woshiwocha Dakaya, who has about 2 hectares of land that he works with his wife and with whom he also has to feed 7 children.

He mainly produces mangoes which he sells to the market, earning an average annual income of 30,000 birr (about 530 euros).

He had already participated at the time of the interview in a training programme, which took place over several weeks, divided into 2 days dedicated to the good agriculture practices and 2 days on compost preparation.

Mr. Afamu told us that he particularly appreciated the training and that can invest a part of the income to purchase pumps that allow to increase the agricultural production. In this regard, he has many expectations in the next part of the project which involves the installation of demonstration systems of irrigation powered by solar energy to evaluate the purchase on his own with a group of associates.

Mrs. Abebech Toga, from the same village of Woshiwocha Dakaya, age 35, has about 0.5 hectares of land that she works with her husband and through which she also has to feed 8 children, three of whom are elder and help her.

Ms. Abebech mainly grows beans, cassava, corn, bananas and coffee. She does not grow vegetables due to lack of water.

What she produces is sufficient to cover the food needs of the family for only 7 months, at best, out of 12.

For the rest, she satisfies the food needs of the family with a small trade in food products (cassava and coffee) and animals, from which it derives an annual income of about 40,000 birr (about 740 euros).

She expected to develop production thanks to the training received from the training program. Compost, for example, would allow her to have natural fertilizer for years whereas



**Mr. Aissa Afamu, from the village of Woshiwocha Dakaya**  
(M. D'Agostini)



**Mrs. Tseganesh Amanuel, from the village of Woshiwocha Dakaya**  
(M. D'Agostini)

Mrs. Messeleth Oida, age 40, from the same village of Woshiwocha Dakaya, has about 1 hectare of land - that she works with her husband and with whom she also has to feed 7 children – which produces cassava, mais, potatoes, sweet potatoes, haricot beans and other vegetables.

She told us that she produces enough to feed the family and that from the sale of agricultural products she earns an average of 50,000 birr (about 880 euros) a year.

About the training she particularly appreciated the teachings on compost production.

As for the division of roles between men and women in work activities, she reported that she takes all the decisions in agreement with her husband even if it is usually the latter who signs the contracts.

Mrs. Tseganesh Amanuel, age 23, from the village of Woshiwocha Dakaya, has about 0,25 hectare of land that she works with her husband and with whom she also has to feed 1 child.

She mainly produces cassava, mangoes, sweet potatoes, haricot beans and other vegetables, some of which she uses for self-consumption and some she sells to the market with an average annual revenue of 20,000 birr (about 350 euros).

Like the other beneficiaries, she participated in the trainings on compost production and other good agriculture practices.

Mrs. Tseganesh Amanuel told us that, thanks to compost training, she could save up to 2000 birr (about 35 euros) a year on the purchase of chemical fertilisers.

As for the division of roles between men and women in work activities, she reported a general balance, except for a more marked incidence of men in signing contracts.



**Mrs. Messeleth Oida, from the village of Woshiwocha Dakaya**  
(M. D'Agostini)

In conclusion, Mrs. Oida expressed the hope that training opportunities on other aspects of agricultural activity could be repeated in the future

In the Village of Dekaya 01 we interviewed Mr. Matios Biremo Salato, whose family, which is made up of 6 people, earns an income of less than 500 euros a year and suffers from food security problems for 1 to 4 months a year.

He attended training on Good Agriculture Practices (GAP) and told also us that, thanks to the knowledge learned during the training, he managed to save around 30 euros which, for their family needs, constitutes a considerable amount and he therefore expressed a high degree of satisfaction with the results achieved thanks to the project.

He expressed the hope that in the future other farmers in the community could be involved in similar training experiences.



**Mr. Matios Biremo Salato, member of the “Tesfa” Cooperative in the Village of Dekaya 01**  
*(M. D’Agostini)*



**Mr. Tekle Shonga In the Village of Dekaya 01**  
*(M. D’Agostini)*

Mrs. Alamitu Maza Shanza's family, which is made up of 7 people, earns an income of less than 500 euros a year and suffers from food security problems for 5 to 8 months a year.

She attended training on Good Agriculture Practices (GAP) which gave her the opportunity to increase the productivity of her land while the preparation of compost allowed her to make significant savings on the purchase of chemical fertilizers.

She expressed the hope to receive in the future training on new topics such as the production of cassava.



**Mrs. Alamitu Maza Shanza**  
*(M. D’Agostini)*



**Mrs. Tadelech Birhanu Birano (right) interviewed by Ms. Meskerem Mekiso (left), OFA field agent for CEFA**  
(M. D'Agostini)

Mrs. Tadelech Birhanu Birano's family, which is made up of 3 people, earns an income between 500 and 1.500 euros per year and resides in Woshiwocha Dakaya village.

She attended training on Good Agriculture Practices (GAP) and expressed a high degree of satisfaction with the training activities in which she participated together with the hope of also being able to receive assistance in terms of work tools and agricultural inputs

After the interviews, some women farmers from the Ofa District, Mrs. Busenesh Sciferra, Mrs. Ribeka Fanta and Mrs. Abebech Toca, invited us to visit their respective farms to show us the effects of the lessons learned during the training on agricultural production such as beans, maize and taro.



**Mrs. Busenesh Sciferra shows the beans she produced**  
(M. D'Agostini)

Mrs. Busenesh Sciferra, a widow with 5 children, told us that the application of techniques learned during the training on good agriculture practices (GAP), such as intercropping, the preparation and use of compost obtained from natural products and the protection of the soil from the sun during the dry seasons, allowed her to improve the quality of the products and increase the number of crops for varieties such as maize, taro and beans, achieving an annual income of more than 96,000 Ethiopian birr (about 1630 euro) from the land available for his family corresponding to approximately 1 hectare.

Mrs. Ribeka Fanta's family consists, in addition to her, of her husband and 5 children.

She told us that the application of the techniques learned during the GAP training allowed her to obtain an annual income of approximately 30,000 Ethiopian birr (around 510 euros), from products such as maize and sweet potatoes, grown in the field of approximately 1 hectare of her household, net of products intended for self-consumption for her family.



**Mrs. Ribeka Fanta**  
(M. D'Agostini)



**Mrs. Abebech Toga and her husband, Mr. Marcus Ganeva**  
(M. D'Agostini)

Mrs. Abebech Toga, from the village of Woshiwocha Dakaya, age 35, has about 0.5 hectares of land that she works with her husband and through which she also has to feed 8 children, three of whom are elder and help her.

Ms. Abebech mainly grows beans, cassava, maize, taro, bananas and coffee

She told us that thanks to the techniques learned during the GAP training she improved the quality and quantity of the products.

To this end, she also showed us the significant difference between the products, such as maize and taro, grown using compost and dry season soil protection techniques, and the products she continued to grow using traditional methods.

We visited also the site of the nursery for the Offa District Green Farm built by WODA in the village of Woshiwocha Dakaya.

We therefore discussed about the need to check the type of seeds and seedlings required by the farmers in the area and to identify a price, albeit a subsidized one, which ensures sufficient income for the seedbed to ensure its sustainability over time.

In this regard, in addition to liaising with local authorities, WODA operators were recommended to carry out documented interviews with



**The seedbed in the village of Woshiwocha Dakaya**  
(M. D'Agostini)

local farmers, other than those involved in the Green Farm, where the aforementioned irrigation system powered by solar energy will be installed, and the definition of a detailed business plan of the operating costs of the seedbed and the presumed revenues from the sale of seeds and seedlings produced. Also in this case, the irrigation of the seedbed could be ensured by the use of a small solar pump of the types available from suppliers in Addis Ababa, if the project budget will allow it.

### **5.5. The Ampo Koisha Green Farm**

The Ampo Koisha Farm Bio Economy Center, the WODA Farm for the agricultural training in the Humbo District, has a high demonstrative value to raise awareness of drip irrigation technology and the use of solar energy for irrigation in the area, both technologies, indeed, are still not widespread in the region. Moreover, the training center is a stable and well known structure for agricultural training and it is frequented on a rotation basis by many farmers of the area as well as the farmers of other districts as trainees. It is managed by an organization such as Wolaitta Development Association with solid experience in the field of agricultural training and rural development.



**Mr. Nigatu Jelde, ta manager of Ampo Koisha agricultural training center**  
*(M. D'Agostini)*

The manager of the Ampo Koisha agricultural training center, Mr. Nigatu Jelde, told us that, as long as the solar plant worked, irrigating the field of about 1,5 hectares which is located upstream of the canal that crosses the area, the production was three times higher (from one to 3 crops a year, alternating crops of cereals and legumes) than that based solely on the irregular supply of rain. Given the progressive worsening of agricultural conditions, and therefore of the living conditions of rural populations, due to drought, the dissemination of knowledge of drip irrigation could be a strategic factor in tackling the problem of water shortages in the coming years.

The aforementioned system, installed in 2019, appears to have broken down, due to a series of problems, the main of which are the damage of solar panels already installed there and the inverter that regulates the power flows produced by solar panels.

Given that local managers lack both the competence to repair the aforementioned devices and the financial resources for replacing them, other problems included a clogging of the drip irrigation holes caused by encrustations, some of which are removable once pressure is



**The inspection to the Ampo Koisha broken solar system**  
*(M. D'Agostini)*

restored to the irrigation network (which has been removed to allow the cultivation of the fields while waiting for the inverter to be repaired) while for other clogging, attributable to clay microgranules larger than the holes, it is believed that the relative pipes can only be replaced with new equipment.



**The broken inverter and solar panels of the Ampo Koisha Training Center**  
*(M. D'Agostini)*



The repair of the aforementioned system would have a significant social impact and therefore it was decided to built in the framework of the Ampo Koisha Training Center one of the Green Farm envisaged by the "Mighib La Hullum Project".



**The technicians Facchin and Saraceno checking the filters of the Ampo Koisha irrigation system**  
(M. D'Agostini)



**The fields of Ampo Koisha from which the drip irrigation system was temporarily removed after damage to the solar system**  
(M. D'Agostini)



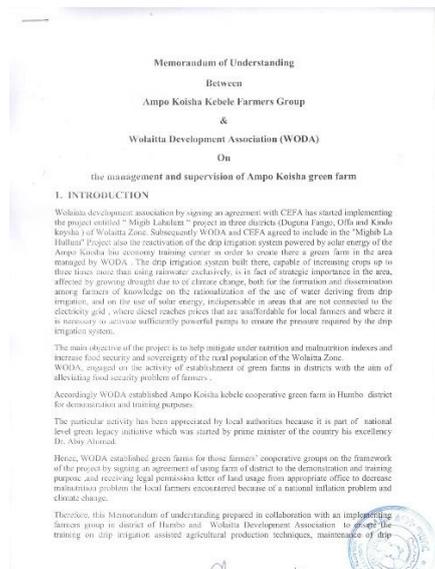
**The well built to collect water from a nearby canal, to be drawn by the Ampo Koisha pump powered by solar energy**  
(M. D'Agostini)



**The new solar panels installed in the Ampo Koisha Green Farm**  
(M. D'Agostini)

Mr. Muluken Doghiso, a farmer we interviewed at Ampo Koisha, whose family which is made up of 8 people, earns an income of about 150,000 birr a year (around 2,500 euros).

He reported us the training on topics such as preparing compost and soil protection was very important for local farmers for improving their agriculture production and, subsequently, living conditions.



**The Memorandum of Understanding with local Farmer Association establishing the Ampo Koisha Green farm**  
(M. D'Agostini)



**Mr. Muluken Doghiso, a farmer of Ampo Koisha**  
(M. D'Agostini)



The visit to the Ampo Koisha Bio Economy Center with Mr. Assefa Nana, the Director (Chief Executive) of WODA  
(M. D'Agostini)



Overview of land located upstream of the local canal that could benefit from drip irrigation  
(M. D'Agostini)

Mr. Simon Toma, age 30, whose family which is made up of 9 people, earns an income of about 200,000 birr a year (around 3,350 euros).

He confirmed us the training on topics such as preparing compost, soil protection and nursery building was very important for local farmers for improving their agriculture production and living conditions. The local farmers are gathered in a community association which would appreciate to get training on use of solar irrigation, which can allow the number of annual harvests to be increased up to three times.



Mr. Simon Toma, a farmer of Ampo Koisha  
(M. D'Agostini)



The new inverter of Ampo Koisha Green farm solar system  
(M. D'Agostini)

## ***5.6. Sustainability and social and economic direct impact of the Mighib La Hullum Project***

The set of activities proposed by the "Mighib La Hullum" Project responds to the crisis and emergency that climate change, drought and irregular seasons have caused in Ethiopia. It is particularly relevant to the context because it was aimed at contributing to an improvement in the nutritional and economic conditions of families in rural communities, through: a) specific training on the topics of food safety, biodiversity and integrated, low environmental impact and modern agriculture; b) creation of awareness and transfer to beneficiaries of tools for adequate exploitation of natural resources; c) impact on the conditions of malnutrition, undernourishment and poverty, widely spread in rural environments, improving access to nutritious foods that promote a balanced diet; d) focus on the problem of water both from the point of view of demonstration interventions aimed at spreading knowledge and familiarity with the most modern irrigation technologies powered by solar energy, and through training actions on the use and importance of water and on the need to avoid waste.

Furthermore, the "Mighib La Hullum" Project was set up with particular attention to sustainability from an economic-financial, institutional and socio-cultural perspective.

Economic sustainability was ensured by the work carried out with families, who thanks to the project will be able to direct their agricultural activity not only towards an improvement in food security, but also towards an increase and diversification of income, through the use of techniques that will guarantee production autonomy over time, which will lead to the financial sustainability of the intervention even after the end of the project. In particular, the economic-financial sustainability of Green Farms will be achieved thanks to the sale of the raw materials and crops produced in them and, more generally, of the services they will offer to farmers and rural communities, also following specific attention aimed at developing the respective business plans in collaboration with the local communities and authorities and with the Ethiopian partner WODA.

The project is also in line with the priorities of the Ethiopian government and of the Italian and international cooperation in the country, which have focused more on the issues of malnutrition, undernourishment and environmental sustainability following the emergencies caused by climate change in recent years. The project will be sustainable at an institutional level thanks to the direct involvement of local institutions and associations which will ensure the continuity of the initiative.

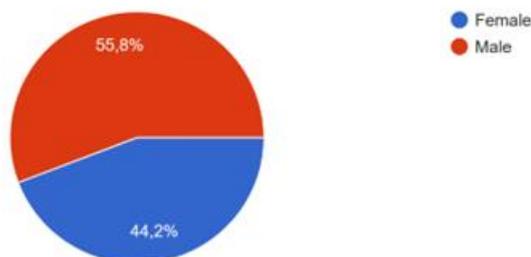
The use of sustainable agricultural practices will not only improve food security indices, impacting on nutrition and malnutrition, but, thanks to the use of native seeds and the recovery of agricultural traditions in harmony with the environment, will also contribute to the defense of sovereignty food in full respect of the culture of the area. The training sessions, carried out directly in the field by the local partner, allowed an intervention with high cultural relevance. A multiplier effect was thus obtained in the communities, reaching a high number of indirect beneficiaries thanks to the transfer of the skills acquired by the direct beneficiaries to the other members of the rural communities. The topics covered in schools, together with those addressed to mothers, will constitute an added value and a tool for integration into the Wolaita education and training system.

During the project, a monitoring action was therefore carried out which, on the one hand, was aimed at verifying the state of progress of the various planned activities and any adaptations that may be necessary due to local conditions or the onset of unforeseen difficulties, on the other hand, we tried to collect all the useful elements to verify the introduction of effective changes in the organisation, work and life of the beneficiaries, changes suitable for achieving the set objectives in a long-lasting and sustainable way.

From the data collected through interviews carried out in the field by CCCA, as well as, thanks to the aforementioned digital interview collection system (via mobile phones, PCs and tablets) set up by CCCA, the operators of the other partners, such as trainers, field agents and activity coordinators, it was possible to acquire a sufficiently large sample of responses to have a picture of the living conditions of the beneficiaries before the start of the project.

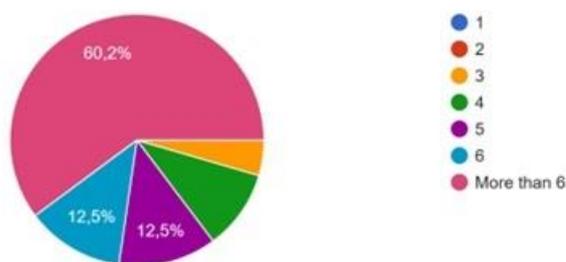
Around 100 beneficiaries (88) responded to the questionnaires prepared by CCCA, 56% women and 44% men, of which 8% were under 29 years of age and 92% were 29 years of age and over, belonging to all three districts of the Wolaita Zone involved by the Project: Diguna Fango, Kindo Koisha and Offa and coming from 6 villages of the aforementioned districts: Borkoshe, Dakaya 01, Fango Damot, Fango Sore, Sere Fenchawa and Woshi Wocha Dakaya.

Gender



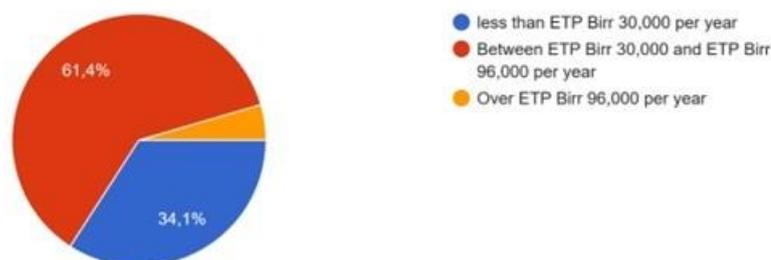
84% percent of the interviewed beneficiaries belonged to families with 5 or more members, of which 60.2% with more than 6 members, 12.5% with 6 members and 12.5% with 5 members.

Number of beneficiary's family members including the beneficiary



Almost all of the beneficiaries (97%) interviewed declared that of being a farmer as their first activity, and almost all (95%) declared an annual income of less than 96,000 birr (equal to approximately 1,600 euros), of which 34.1 % an annual income of less than 30,000 birr (around 502 euros), lower than the absolute poverty income indicated by the United Nations (in this regard, however, it must be considered that the answers did not take into account the value of agricultural production used for self-consumption).

#### Annual Average Household Income



Perhaps most significantly, 80% of beneficiaries interviewed said their household suffers from food security issues, of which 62.5% said they do not have enough food for 1 to 4 months. per year and 15.9% do not have sufficient food for 5 to 8 months of the year.

#### How many months a year does your family suffer from food shortage problems?



As regards the women condition, also taken into consideration by the Project although it was not a specific object, we note that, according the data on direct beneficiaires of the project, women represented:

- 42,06% of trained farmers on organic fertilization and compost preparation (233 out of 554);
- 58,52% of trained farmers on Conservation agriculture (crop rotation, soil mulching and no-till sowing);
- 40,63% of participants to final events to celebrate World Water Day which followed the workshop on raising awareness among children and young people on the topic of water and correct nutrition (256 out of 630);
- 100% of 150 mothers who participated to activities on strengthening the skills in nutrition and correct food preparation for a balanced diet.

Moreover, from the sample interviews (56% women) it emerged that women participate in agricultural work to an equivalent extent to that of men but are burdened by the burden of domestic work (caring of children, cooking, taking care of the house), which they deal with almost exclusively. Women, who therefore bear the greatest workload (household and agricultural work), who also told us that they contribute to decisions on small family investments on an equal footing, do not exercise an equally equal formal role, generally falling to husbands the role of head of the family (except in the case of families headed by a widowed woman) and that of legal representative of the family in signing contracts (such as the sale of a house or small investments).

In light of the aforementioned framework of the starting living conditions of the beneficiaries, it was possible to obtain from the interviews a first picture of the immediate impact of the activities



*Edited by  
Marco D'Agostini*

carried out within the “Mighib La Hullum” Project (in the following chapter, dedicated to the conclusions, considerations are carried out on the evaluation of the social and macroeconomic impact of the project on the whole area concerned).

As for Result 1, the creation of the Green Farms, despite the reduction from 5 to 3 of the districts involved in the project - due to the aforementioned unforeseen difficulties linked to the COVID pandemic, the general instability connected to the crisis in Northern Ethiopia, the strong inflation and local instability resulting from the disintegration process of the SNNPR region - this was 80 percent satisfied as 4 Green Farms were created (out of the 5 planned) in the Diguna Fango, Kindo Koisha and Offa Districts and in the Agricultural Training Center of Ampo Koisha, in the Humbo District.

Green Farms respond to the need to have a lasting demonstration tool (which, as field experience teaches, often has more educational value than training) on whose economic sustainability the social sustainability of the result depends.

This demonstration function has a strategic value for the local communities involved because it impacts on a wide range of problems, among which the following are highlighted:

- a) the importance of rational use of water in irrigation to increase agricultural productivity in the presence of increasing drought due to climate change;
- b) the diffusion of a new technology such as the use of solar energy in a context in which, in addition to ecological considerations, there are added those inherent to the abandonment of the use of diesel pumps due to the costs of diesel fuel, which prove unaffordable for the majority of local farmers;
- c) the possibility of having a varied range of agricultural products, which allows the beneficiaries to respond to different needs such as nutrition, market access and environmental protection;
- d) the availability of an effective model for the organization of agricultural production;
- e) the availability of a simple but well-structured model for approaching the business;
- f) the availability of an easily replicable model both as a production structure and as a training tool.

As regards the problem of water, from the assessment of Wolaita situation it clearly emerged that the main limitation to the development of a more modern agriculture in the area is linked to the lack of water which is not only ascribable to climatic factors (an agronomic analysis conducted in previous years has found indeed the presence in the region of aquifers similar if not more abundant than those of the Po Valley in Italy although climate change, as already mentioned, has made rainfall much less constant than in the past, reducing the expected annual harvests in some areas from two to one) with regard to the lack of enough investments and training for collection systems, savings and rational distribution of available water.

The experience in Wolaita, as well as numerous international studies, confirm that development in rural areas of Africa is not possible without providing agriculture with access to water powered by renewable energy sources. During the visits at the Wolaita sites identified by WODA and CEFA, in collaboration with CCCA, for the realization of demonstration irrigation systems, to complete the technical-agricultural training, were therefore of fundamental importance.

The progressive introduction, thanks to the example and the training opportunities offered by some pilot plants, of modern irrigation systems, would therefore allow, on the one hand, an increase in production (ensuring more frequent and more abundant harvests) and, on the other hand, a more general modernization of the agricultural world.



*Primary canal, Galda, Offa District  
(M. D'Agostini)*



*Dry basin for water collection,  
Bilate, Diguna Fango District  
(M. D'Agostini)*

In addition to ensuring the food security of the local populations, a more systematic production would in fact allow the consolidation of an agricultural market suitable to favor exchanges (with an increase in the income of the peasants and the added value produced by each supply chain) and, consequently, the investments in rural environments.

In particular, some traditional irrigation systems were visited based on gravity systems in the downstream areas of the rivers through primary, secondary and tertiary channels.

These systems are characterized by an enormous dispersion along the channels (up to 40%) due to the leaks and cracks present in the concrete sections and to the absorption in the soil in the stretches dug in the earth, as well as to evaporation and the absence of pipes suitable for concentrating water on individual plants and seedlings. The result is that the water, in addition to being lacking in the upstream areas of the rivers, often does not even reach all the canals of the territories theoretically served by the existing irrigation systems, so that it was not uncommon to see flooded water collection areas dry.

Once the first experiments have demonstrated to the farmers the results that can be achieved, it will be possible for the farmers themselves, indeed, to face with less risk the challenge of contracting possible



*Dry Channel  
(M. D'Agostini)*



*Edited by  
Marco D'Agostini*

micro-loans to equip themselves with small individual irrigation systems.

The start of some pilot drip irrigation projects, possibly powered by solar energy, is therefore a necessary condition both to spread the knowledge of this technology among the farmers, and to allow a quantification of the real benefits, quantification which in turn constitutes a condition for triggering a self sustained multiplicative process. Just as the diversification of production towards new plant varieties (such as combining certain vegetables with traditional cereal crops) inspired by the agriculture training has already allowed the farmers involved to verify the benefits, triggering a series of innovative processes, it is believed that even the introduction of modern pilot irrigation systems can favor a similar spontaneous diffusion process.

As far as the topic of solar energy is concerned, first of all we recall the issue of the process of progressive abandonment, which has been underway for some years, of diesel pumps, not for ecological reasons but because the costs of diesel fuel could not be afforded by the majority of farmers and local cooperatives even before the energy crisis of recent years. In this regard, one can only believe that the trend has worsened after the energy crisis and the strong increase in inflation in the country and the devaluation of the Ethiopian birr.

Secondly, in the presence of the worsening of the phenomenon of climate change and the consequent growing drought - which in some cases has determined the halving of harvests, in addition to the erosion of the lands available for cultivation - it is considered particularly significant to offer rural communities and to the local authorities a complex set of solar devices, of which they will be able to evaluate the profitability in the future in view of the possible replication in other villages and other districts to cope with the reduction in rainfall and as an alternative tool to gravity irrigation, which suffers from the aforementioned problems. In particular, the availability of models of small mobile pumps in the districts of Diguna Fango, Kindo Koisha and Offa and of a more sophisticated drip irrigation system powered by fixed solar panels in the Green Farm of Ampo Koisha will allow farmers and local authorities to evaluate the respective cost-benefit ratio also with a view to encouraging the diffusion of this technology with the farmers' own means, possibly assisted by the micro-credit instruments available in the area.

As for the range of traditional products offered by the Green Farms and their nurseries, it is noted that they respect the cultural identity of the beneficiaries and, at the same time, are sufficiently varied to respond to a plurality of objectives (among which the beneficiaries will be able to identify in the time those most compliant with the needs of the respective communities) such as:

- a) production for self-consumption to ensure families have a balanced diet, which is too often neglected both due to the lack of food, which does not physically allow families to carry out qualitative assessments on the use of the nutrients necessary for adult health and for the development of children, and due to a lack of knowledge and awareness of the importance of these aspects, a factor which specifically influenced Result 4 which will be addressed below. This need is met by products such as teff, which forms the basis of almost all dishes in the area, or legumes, which fulfill the need to ensure the proteins necessary for the body in those situations in which low income does not allow for supplies with regularity of meat;
- b) the so-called "cash crop" products, intended for the market, which ensure higher economic profitability but which require particular attention to quality requirements, without which marketing becomes more difficult and, consequently, the possibility of earning income. This category includes products such as coffee, spices and fruit trees such as mango;
- c) products aimed at preventing erosion and desertification and encouraging the formation of soil humus and which therefore perform both an environmental function and, indirectly, an economic function, as soil protection prevents the impending risk, aggravated by change

climate, of a progressive reduction of arable land whose effects we noticed during the interviews. Products such as gravillea, acacia trees and some fruit trees meet these purposes.

As for the demonstrative value of Green farms as a model of organization of agricultural production, it is noted that they, in addition to ensuring an income for the farmers directly involved, will offer their families and the farmers of the neighboring rural communities valuable examples, lasting well beyond the temporal limit of the project activity, on aspects such as the range of products to be produced, the preparation and management of the development of nursery plants, the rotation, spacing and intercropping of crops, the use of compost prepared with natural materials such as foliage, manure, earth and ash and the protection of the soil from erosion.

The Green Farms will also constitute a structured and permanent model of the way of doing business, teaching for the participants and neighboring communities on aspects such as income and expense planning, the drafting of cooperation memorandums and business planning, investment planning and approach to the market.

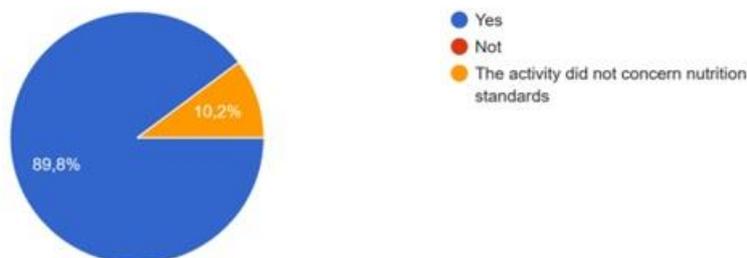
The Green Farms, having small dimensions and being based on local culture, will finally offer a model that can be easily replicated, for production or training purposes, by private individuals, associations or local authorities, as a whole or for specific aspects such as the construction of nurseries, the use of solar irrigation systems, cultivation techniques, team spirit, association statutes and business approach.

Given that these are start-ups destined to grow, although the project did not foresee a specific target number of individuals to be involved as beneficiaries, it is estimated, on a prudential basis, that all 499 farmers who completed the training activities on agricultural techniques - mainly gathered together in the rural cooperatives whose representatives signed the Memoranda of understanding establishing the Green farms (GF) of Duguna Fango, Kindo Koisha and Ofa Districts- can be considered as direct beneficiaries of GFs. Moreover, we have to add the 14 members of the farmer association which signed the MOU establishing the GF of Ampo Koisha in the District of Humbo and 429 beneficiaries of the distribution of seedlings during the demonstration phase of the creation of the Green Farms nurseries, for a total of 942 beneficiaries which, including family units, with a conservative estimate of 5 members per family unit, brings the number of indirect beneficiaries to about 4,710.

As for result 2, the training of farmers on agricultural techniques, despite the reduction in the number of districts involved in the project from 5 to 3, it is highlighted that the objective of training 500 farmers was achieved by 90 percent, training 450 of them, thanks to the increase in beneficiaries for each district.

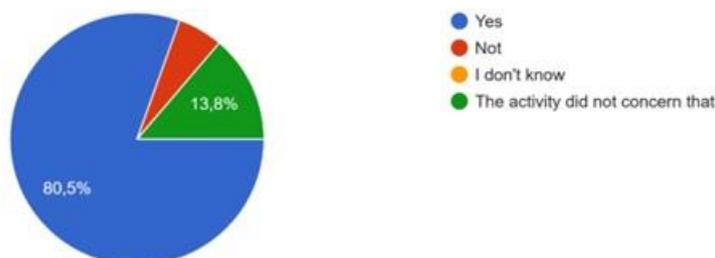
Almost all the beneficiaries interviewed expressed a high degree of satisfaction with the training received (100%), recognized that the training contributed to the improvement of agricultural production capacity (100%) and income (100%) and recognized a positive impact on the food safety of the respective family unit (99%) and on the quality of nutritional standards (90%; moreover, the 10% who did not recognize this improvement justified this opinion with reference to the fact that they participated in training activities not related to this aspect)

Did the activity you participated in improved your nutrition standards?



81 percent of the beneficiaries interviewed also reported that they believe that the training has allowed them to find a job, evidently not in the sense of being hired as an employee but rather believing that the training has allowed them to structure the activity more effectively agricultural sector, encouraging its evolution towards a real micro-enterprise.

Do you think the activity you participated in will help you find a job?



The farmers interviewed explained to us that the application to their family farms of the notions learned has allowed an improvement in the quality and quantity of their products, as well as their diversification, with consequent positive effects on the reduction of food shortages, on the quality of nutrition and income.

An exact quantification of these effects was not possible, given that after the conclusion of the training activities there were not yet sufficient harvest cycles to produce statistics, but already from the first harvests following the application of the techniques learned on the respective farms indicative results emerged. Some of the farmers involved have in fact preserved portions of land cultivated with traditional techniques and have proudly shown us the results achieved in other portions of the fields by applying techniques such as the preparation and use of compost with natural products and soil protection. for products such as beans, corn and taro, which grew much more luxuriantly.

In fact, the agronomic techniques promoted have recorded a good degree of application among the beneficiaries. To this end, the follow-up/technical assistance activity carried out by CEFA staff was of fundamental importance who, by periodically visiting all the beneficiaries involved, was able to verify firsthand the effective and correct adoption of the practices promoted.



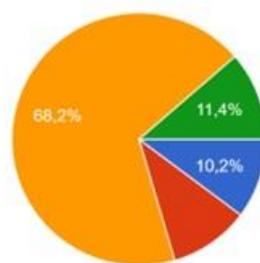
**Comparison between taro production, respectively, with (left) and without (right) the use of techniques such as the addition of compost and soil protection shown to us by Mrs. Ribeka Fanta in the village of Dekaya 01 in the Offa district**

*(M. D'Agostini)*

Some more analytical quantitative data was instead offered to us by the analysis of the impact of the preparation and use of compost produced with natural materials such as foliage, grass, manure, ash and earth as a replacement for chemical fertilizers traditionally purchased previously (the price of which, due to the conflict in Ukraine, have increased by up to 300%). This innovation resulted in savings between 1,200 (20 euros) and 5,500 (92 euros) birr per year, an amount which, given the low incomes of the rural population, meant for the majority of farmers involved a saving of between 5 and 10 percent on annual income, with peaks of 18% for the lowest incomes. These savings, the beneficiaries told us in the interviews, were allocated to improving living conditions (purchasing clothes, books for children's school activities, food that cannot be produced on the family farm) or to small investments (such as, for example, the purchase of poultry and vegetables to carry out small itinerant trade to supplement the income deriving from agricultural activity).

It is interesting to note the strong sense of community and solidarity found in a rural environment from the responses provided to the request for possible suggestions regarding the approach to be given to possible future training activities in the same area: the vast majority (68.2 %) of those interviewed proposed extending similar activities to new participants to expand the number of beneficiaries, compared to 20.4% who proposed repeating the training for themselves for refresher purposes (10.2%) or to learn new techniques (10.2%).

What would you suggest about the organization of similar training or activities in the future?



- Participate again in similar activities in order to review or update the concepts learned
- Participate in similar activities again in order to learn more about new topics
- Extend similar activities to new participants in order to expand the number of beneficiaries
- I don't know

As regards Result 3, the raising awareness of children and young people in schools on the topic of water and correct nutrition, from interviews it was found that this educational activity also involved, as parents, 51% of the beneficiary farmers of the training on the techniques agricultural, a symptom of how much the topic is felt by the local population.



**The students of the Wolaitta Liqa School for orphans managed by WODA in Soddo**  
(M. D'Agostini)

The water shortage is strongly felt in Wolaitta and its schools, so much so that even a school of excellence in an urban environment such as the Wolaitta Liqa School for orphans managed by WODA in Soddo suffers from lack of water for several days a week waterfall.

The problem, however, is much more acute in rural environments where there are family communities that live even 6 or 7 km from the nearest water source and where children are often called upon to help the family by fetching water. with heavy jerrycans, the luckiest helped by a cart and the unluckiest on foot.



**Children who go to get water for the family with yellow cans, relatively lucky because they can be assisted by a cart pulled by donkeys where you often meet children and adults carrying the cans of water on foot.**  
(M. D'Agostini)

The duration of 5 days for each of the Districts involved allowed us to deepen knowledge and consolidate learning, ensuring a significant impact on the school communities involved. In this way, the project played a key role in providing concrete educational tools to address vital issues related to the environment, water and nutrition, thus contributing to the formation of aware and responsible citizens.

Moreover, the drafting of a guide with good practices on sustainable water management has been a valuable educational tool, providing schools, community leaders and local authorities with concrete guidelines for adopting responsible behavior in managing this vital resource; the awareness-raising action on the sustainable management of water resources carried out by the project was thus consolidated through the activity of workshops in schools and the celebration of World Water Day in the target districts.

The creation of events on the occasion of World Water Day contributed to raising awareness among a wider audience, involving not only students but also their families and the local communities. These events amplified the impact of the initiative, spreading the message of sustainability in a concrete way and inspiring positive actions at a collective level. Following the event, some students and community members were interviewed, who expressed their intention to put into practice the knowledge acquired during the celebrations and to share this knowledge with their family members and other inhabitants of their villages. This demonstrates the positive impact of the event in promoting conscious and sustainable behaviors related to water and hygiene. The active involvement of local communities and the use of participatory methodologies contributed to making the celebration of World Water Day a success in terms of popular participation, thus providing project partners with an important opportunity to raise awareness on issues of crucial importance such as water conservation and adopting good personal hygiene practices.



**Some images of the events dedicated to the celebration of World Water Day**  
(Picture by CEFA)

The recreational and pedagogical activities carried out in the schools and the creation of events on the occasion of World Water Day have evidently achieved the objective of comprehensive awareness-raising on the issue of water and correct nutrition, both because at the end of the training activities there was a massive participation of children and students in activities aimed at preparing elaborated proposals for active citizenship on the subject (on the occasion of the awareness events that took place in each capital of the 3 districts for World Water Day with school children and the collaboration of the competent Woreda), both because the feedback had on the involvement in this initiative aimed at schools by farmers as parents testifies to the strong impact on families in the region.

In summary, this part of the project demonstrated that investing in the education of young people on critical issues such as water and nutrition not only generates awareness, but also translates into concrete and positive actions for the protection of the environment and the promotion of a healthy and sustainable lifestyle. The impact of these activities is reflected not only in the knowledge acquired, but above all in the behavioral changes that occur in the participants, transforming them into true agents of change for a more sustainable future

As for Result 4, the creation of nutritional training workshops of an intensive food preparation course for mothers of the 3 districts involved, it is necessary to underline the close correlation with results 1 (Green farms) and 2 (training on agricultural techniques), as the problems of malnutrition and undernourishment found in the rural areas of Wolaita and, more generally, of Ethiopia are linked to access to food no less than to correct and exhaustive training and information on a balanced diet for adult health and children's growth.

In terms of the activity carried out, the training phase on the concrete preparation of dishes with traditional local foods (such as, for example, sweet potato, Kocho and other local foods) saw the active participation of the 150 beneficiary mothers, 50 for each of the districts of Diguna Fango, Kindo Koisha and Offa.

The nutritional training workshops allowed the practical dissemination of crucial knowledge on correct nutrition. The women have acquired essential skills to ensure a balanced diet, understanding the fundamental principles of nutrition, the specific needs of their families and communities and the practical aspects of preparing nutritious foods. The development of a recipe book adapted to local resources made the application of the new knowledge acquired in daily life accessible and practical. At the same time, the intensive food preparation course allowed the 150 mothers involved to put the concepts learned into practice, transforming theoretical learning into practical skills. These combined efforts have not only improved nutritional awareness but also helped reduce the risk of malnutrition, promoting a healthier and more prosperous family environment in the target districts.



**An image that well represents the satisfaction of the women of the Diguna Fango District participating in the course for preparing food with traditional Wolaita products**

*(Picture by WODA)*

From the sample interviews it emerged that training on nutritional aspects had a significant impact on family habits not only in nutritional terms, as the information learned was transferred into domestic practice, but also on more effective planning of food expenses, a more rational organization of family rhythms (in some families the practice of meeting together for meals has been reintroduced where previously family members mainly tended to arrange meals individually) and, ultimately, better and more peaceful living conditions.

## 6. Conclusions

The Mighib La Hullum project has certainly had a significant impact in the area of Wolaita, both in terms of the quantity of the subjects involved and in terms of the quality of the impact introduced on the rural economy and living conditions.

In this regard we recall the main results of the Project:

- a) Result 1: Creation of 4 Green Farms in the districts in the Diguna Fango, Kindo Koisha and Offa Districts and in the Agricultural Training Center of Ampo Koisha, in the Humbo District, equipped with nurseries and irrigation systems powered by solar energy, with a strong focus on environmental impact but also characterized by a significant openness to the market, in an entrepreneurial logic based not only on the technical training received by the beneficiaries, but also on the respective memorandums of understanding signed with the local farming communities, all related to specific business plans;
- b) Result 2: Training of 554 farmers, about 180 for each of the districts of Diguna Fango, Kindo Koisha and Offa, on modern Good Agriculture Practices applied to traditional products but in a logic more attentive to combining the development of greater productivity with the improvement and the diversification of quality, both in order to ensure a more complete and balanced nutritional intake for the respective families, and with the aim of having products of suitable quality for the market;
- c) Result 3: Training of students from 15 schools in the districts of Diguna Fango, Kindo Koisha and Offa - and, starting from them, also raising awareness of their respective families, school authorities and local authorities - on the topic of water and proper nutrition;
- d) Result 4: Training of 150 mothers - 50 for each of the districts of Diguna Fango, Kindo Koisha and Offa - on nutrition and the concrete preparation of dishes with traditional local Wolaita foods.

As regards Result 1, the creation of the 4 Green Farms, given that, as noted above, the Project did not aim to reach a specific number of individual beneficiaries, it is estimated that, compared to approximately 942 direct beneficiaries, with the consequent benefits for the approximately 4,710 members of the respective families. This is a volume, equal to approximately one fourth of the approximately 20,000 inhabitants of the 4 villages involved - Fango Damot, in the Diguna Fango District, Borkoshe, in Kindo Koisha District, Woshi Wocha Dakaya, in Offa District, and Ampo Koisha, in Humbo District – which allows us to hypothesize that green farms will have a demonstrative value (which, experience teaches us, often has a greater value than training) for the entire population of the aforementioned villages.

This impact will concern:

- a) food safety and the quality of nutrition of the communities involved (the Green Farms are not specialized but their nurseries and their production can be replicated on family farms and aimed at increasing agricultural productivity - also thanks to more systematic irrigation than the mere reliance on increasingly irregular and sparse rains - and diversification within the range of traditional Wolaita products);
- b) the approach to business, the increase in income and the creation of sustainable jobs (the Green Farms will offer direct and indirect beneficiaries valuable examples of how agricultural products aimed at the market are prepared, how memorandums of agreement and business plans for collaboration between members of cooperatives and farmers' associations who also take charge of hiring employees for aspects such as the surveillance, maintenance and coordination of common structures);
- c) the use of new technologies that would otherwise be inaccessible (irrigation powered by solar energy, suitable for overcoming both the use of diesel pumps, whose fuel has an unaffordable



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- cost, and the problems of traditional gravity irrigation, which cannot reach the land upstream from watercourses and is in any case characterized by high dispersion; use and maintenance of solar panels; use of drip irrigation);
- d) the protection of the environment and the territory (vegetable specialties have been produced and will continue to be produced from green farm nurseries - such as gravillea, acacia and some fruit trees - suitable for protecting the land from drought and desertification driven by change climate; irrigation powered by solar energy paves the way for greater attention to less polluting renewable energies that do not produce CO<sub>2</sub>).

A specific evaluation must then refer to the demonstrative value of the Ampo Koisha Green farm. Since this is a green farm built as part of a larger agricultural training center of fundamental importance for the entire Woaita area, also taking into account that the Green farm will have one of the rare drip irrigation systems powered thanks to the Project from solar panels available in the region, as reported to us by the local partner WODA, it must be assumed that it will take on a strategic value, in a context in which climate change is leading to a growing shortage of water, for the authorities and private operators in the Woliata Zone, which has approximately 2.1 million inhabitants.

As regards Result 2, the training of 554 farmers, about 180 for each of the districts of Diguna Fango, Kindo Koisha and Offa on modern Good Agriculture Practices, with the consequent benefits for the approximately 2,770 members of the respective families, given the local rule - which involves the commitment of each farmer benefiting from the training to pass on the knowledge learned to at least 10 nearby farmers - it is estimated that at least 5,540 farmers in the area can benefit indirectly and, prudently applying the average number of 5 members (from the beneficiaries' responses in the interviews the average number of family members appears higher) for each family, as many as 27,700 family members.

This is a volume, equal to the whole population of the approximately 60,000 inhabitants of the 6 villages involved - Fango Damot and Fango Sore, in the Diguna Fango District, Borkoshe and Sere Fenchawa, in Kindo Koisha District, Woshi Wocha Dakaya and Dakaya 01, in Offa District – and 7% of the approximately 400,000 inhabitants of the 3 Districts involved.

Having illustrated the impact on direct beneficiaries in the previous chapter, it can be estimated that the impact on all indirect beneficiaries will concern:

- a) An increase in the quantity, quality and diversification of the agricultural products of the farmers of the neighboring communities progressively involved indirectly through the cascade training carried out by the direct beneficiaries and through the imitative processes - which have even more incisive effects - with consequent beneficial effects in the fight against the problems of malnutrition and undernourishment that characterize the area.

It is noted in this regard that a quarter of Ethiopian districts are classified as having a food and nutrition security crisis due to environmental disasters, more than 32% of the population suffers from malnutrition. According to a 2010 report, in Ethiopia 5.2 million people live in a precarious food security situation whose worsening is mainly attributable to the lack of rainfall in recent years during the forecast rainy seasons, which have weakened the food situation, already severely tested by the constant increase in food prices and the global financial crisis. Ethiopia ranks 174th out of 182 countries in the UNDP Human Development Index country ranking (2016).

Moreover, according the State of Food Security and Nutrition in the World 2022 , in 2021 the number of undernourished people in Ethiopia has reached 28.6 millions (24.9% of total population), the number of severely food insecure people has reached 22.6 millions (19.6% of total population) and, in 2020, the number of children (under 5 years of age) affected by

wasting were 1.2 millions (7.2%) and the number of children (under 5 years of age) who were stunted has reached 5.9 millions (35.3%).

From the sample of interviews collected from the beneficiaries, we also found that 79.5% of families suffer from food security problems and, of these, the problem of insufficient food occurs for more than five months a year for 17% of families of the interviewees.

- b) The growth of agricultural productivity combined with the savings deriving from the preparation and use of compost produced with natural materials available in rural environments as a replacement for chemical fertilizers - we reported in the previous chapter that this saving can affect up to 15-18% of low disposable income in rural areas - will also determine a growth in disposable income for the families involved, with further impact on mitigating the problem of malnutrition and undernourishment.

In this regard it is noted that, according to the data indicated by the Report State of Food Security and Nutrition in the World 2022 - which states that a healthy diet means a cost of US \$ 3.39 per day, a nutrient adequate diet means a cost of US \$ 1.94 per day and an energy sufficient diet means a cost of US \$ 0.58 per day - if we multiply those values by 5, which is the average number of family members in Wolaita (although the sample of our interviews indicates a larger number), we see that on the basis of the income indicated by the interviewees, no one has an income capable of ensuring to his family unit a healthy diet, only 4.5% of those interviewed have an income sufficient to ensure their family unit has an adequate nutritious diet and 34.1% of those interviewed do not even reach an income sufficient to ensure their family unit has a sufficient energy diet.

As regards Result 3, the raising awareness of children and young people in schools on the topic of water and correct nutrition, it is highlighted as diseases deriving from the consumption of non-drinkable water are among the most widespread in Wolaita (In 2016, Urban Population using improved drinking water sources was 71% and Rural Population using improved drinking water sources was only 61%) and how the theme is therefore felt in Wolaita.

Given that the theme has points of synergy with the aforementioned Result 1, the creation of 4 Green farms in 4 districts of the Area also focused on a more effective use of water for irrigation, it is highlighted how the involvement of the 630 students, teachers, local authorities, representatives of local communities and moreover, their families (more than 50% of the farmers who benefited from the agricultural training interviewed told us that they were also involved, as parents, in the educational programs carried out in the 15 schools of the 3 districts of Diguna Fango, Kindo Koisha and Offa), would induce to believe that the topic will continue to be developed as part of educational programs even after the conclusion of the Mighib La Hullum Project.

In the meantime, sample interviews have allowed us to verify that the educational activities carried out as part of the project have already induced changes in the family behaviour of the families involved relating to the need to avoid wasting water, its importance for a healthy diet and the importance of hygiene in the use of water to prevent serious diseases widespread in the region.

As regards Result 4, the implementation of nutritional training workshops of an intensive food preparation course for 150 mothers from the 3 districts involved, the close correlation with results 1 (the Green farms) and 2 (the training on agricultural techniques), is underlined, as the problems of malnutrition and undernourishment found in the rural areas of Wolaita are linked to access to food no less than to correct and comprehensive training and information on a balanced diet for adult health and growth of children.

Given a direct impact on the mothers' families, for a number of approximately 750 beneficiaries, a positive cascade indirect impact can be estimated on at least 1,500 families and approximately 7,500, equal to approximately 2% of the population of the districts involved.



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In conclusion, it is highlighted that the Mighib La Hullum Project, which aimed to create Green Farms, train farmers and raise awareness among communities (with particular attention to children and mothers) was in strong synergy with the activities conducted by the Regional Center for Agricultural Research and with all the rural development plans implemented in the area by the national authorities and within the framework of international programmes. The project is in fact linked to the interventions of the Italian Cooperation on food security in Ethiopia, carried out by the World Food Program (WFP) and the Food and Agriculture Organization of the United Nations (FAO). It is also connected to the "Migration Compact", the Euro-African pact for the prevention and management of migratory flows without, however, overlapping with them. Working for the improvement of agricultural production, it also connects with the strategic plans of the Ethiopian government in collaboration with UNIDO.

The difficulty in accessing data disaggregated by district, also due to the dissolution process of the SNNPR region (whereas the region of the South Ethiopia Regional State that emerged from it still sees the administrative organization in a phase of adjustment, with the transfer of the offices from the old regional capital of Awasa to the new capitals, which are also configured as a network in the new region, with some departments located in Sodo, others in Arba Minch and still others in the capitals of other areas that make up the new region), as well as the relatively short duration of the project did not allow the acquisition of updated statistical indicators that would allow the social impact of the Project to be quantitatively measured.

However, it is believed that the data presented already offer a measure of the value of the Mighib La Hullum Project together with the final consideration of the importance of the evolution of such international cooperation relations from a project logic to a more systematic partnership logic. Such an evolution should be required both in order to be able to have, over time, of increasingly analytical data series on the effects of the projects on the actual change in the living conditions of the beneficiary populations, both, above all, in order to enhance those human relationships that have been created over the months and years and which, as reported by the beneficiaries and local partners during the activities carried out together, beyond the material results of the specific project, constitute the deepest heritage of these experiences.





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## ANNEX



## ANNEX

### I. Socioeconomic data about the Wolaita Zone and the districts involved in the project<sup>22</sup>

#### 1. The Wolaita Zone

WOLAITA ZONE SOCIAL ECONOMIC DATA				
	Year of detection	Year of detection	Year of detection	NOTES
Year of detection (unless otherwise specifically indicated)	2014	2015	2016	Year 2021
<b>SOCIO CULTURAL DATA</b>				
Total Population (data 2021)	1.851.111	1.907.727,00	1.907.805	2,142,063
% Male of Population	907.044	915.708	941.763(49%)	1,051,428 (49%)
% Female of Population	944.067	992.019	966.041(51%)	1,090,635 (51%)
Pop. Aged 0-14 (%):		918.547 (48,1%)	906.725	
		48,10%		
Pop. Aged 15-25 (%):			368.320	
Pop. Aged 26-64 (%):			596.683	
Pop. Aged 15-64:		949.448		
Pop. Aged 15-64 (%):		49,77%		
Pop. Aged 65-more (%):		39.732 (2,1%)?	36.077	
		2,10%		
Dependency rate		102,45%		
Population growth rate	2,9	2,9	2,9	
Farming acitivities		growing fruit and root crops		
Total Head of household:		331.148		
Male of Head of household		282.239		
Female of Head of household		48.909		
Yearly income		533.240.967,73		
live births per woman (%):				
Life expectancy at birth females (years):	70-80 years	70-80 years	70-80 years	
Life expectancy at birth males, (years):	60-70 years	60-70 years	60-70 years	
Mortality rate				
Infant mortality rate (per 1 000 live births)	1,38%	1,38%	1,38%	
Infant mortality rate below 1 years	0,42%	0,42%	0,42%	
Infant mortality rate below 5 years	1,00%	1,00%	1,00%	
Total dependency ratio (Pop. aged 0-14 & 65+ per 100)		958.279(50.3%)		

<sup>22</sup> Data gathered thanks to the vital collaboration of WODA.

Number of primary school in the Zone		496		
Number of secondary school in the Zone		63		
% of population with only primary education: Total	471012(25%)	503.010		
Education: Primary gross enrolment ratio (f/m per 100 pop.): Male		262.408		
Education: Primary gross enrolment ratio (f/m per 100 pop.): Female		240.602		
% of population with secondary education: Total	261292(14%)	83.913		
Education: Secondary gross enrolment ratio (f/m per 100 pop.): Male		45.304		
Education: Secondary gross enrolment ratio (f/m per 100 pop.):Female		38.609		
% of illiterate population				
Urban population (%) : Total	283970(15%)	275.511		
Urban population (%) : Male		141.342		
Urban population (%) : Female		134.169		
Rural population (%)	1623835(85%)			
Number of Household	383.611	383.951,00	395.861,00	
Household size (population/household):	5	5	5	
Zonal Gross Product	326.345.772,44	349.080.666,44		
Yearly number of residents emigrated elsewhere (other regions or abroad):	0	763	76	
Migration data: Total		9.258		
Migration data: Male		6.721		
Migration data: Female		2.537		
Refugees stock (number):	2794	3609	4150	
New Refugees registered in the year:				
Yearly Tourist arrivals	4575	4.575		
Hospitals existing in the Zone	7			
Rural surgeries and other health points existing in the Zone	585			
Hospital beds available in the Zone	7			
Unemployment:Total		43.719		
Unemployment:Male		31.033		
Unemployment: Female		12.686		
Unemployment rate		6.4		
<b>GEOGRAPHIC DATA</b>				
Agricultural land (square kilometers)	296.768,00	451.171square kilometer		
Mountain land (square kilometers)	46.877,00			
Name of Mountain				
Wojto Mountain <i>Hobecha Beda (Humbo S/Zuria Offa)</i>		<i>Elevation 2100</i>		

Ada Mountain Hobeche Bongata (Humbo S/Zuria Offa)		Elevation 2015	
Gamo Mount Bola Wanche (Humbo S/Zuria Offa)		Elevation 1945	
Kache Mountain Bossa Wanche ((Humbo S/Zuria Offa)		Elevation 1910	
Hoko Mountain Abela Gefeta (Humbo S/Zuria Offa)		Elevation 1900	
Sere Mountain Abela Shoya (Humbo S/Zuria Offa)		Elevation 1870	
Gamo Gofa Abela Longena (Humbo S/Zuria Offa)		Elevation 1890	
Solko Mountain Kodo Kanko (Humbo S/Zuria Offa)		Elevation 2542	
Damota Kokate (Sodo Zuria )		Elevation 2958	
Amacho Amacho (Sodo Zuria )		Elevation 2500	
Wanche Bolla wanche (Kindo koisha )		Elevation 2025	
Homia woshi Tulicha (Kindo koisha )		Elevation 1925	
Aldada Tepa (Kindo koisha)		Elevation 2250	
Mushate Gale Warko (Kindo koisha )		Elevation 2234	
Ambo Sere bakala (Kindo koisha )		Elevation 2135	
Kawo Dere Fechena (Offa )		Elevation 2160	
Holoze Yakima (Offa)		Elevation 2810	
Kawo garo Ome bolola (Offa)		Elevation 2800	
Anuwa Koddo (Offa)		Elevation 2650	
Bushecho Adaye dekaya (Offa)		Elevation 2570	
Kerbo		Elevation 2800	Galda (Offa)
Uke		Elevation 2100	Ofa heramo
Zaba		Elevation 2500	Zaba
SAA Tusa		Elevation 2145	Hereje
Buna		Elevation 1134	Udula Matala
Wotagisho		Elevation 2010	Koysha nare
Shoke		Elevation 1900	Zamine nare
Didaye deria		Elevation 1892	Kindodidaye
Koysha deria		Elevation 2480	Kindodidaye
Abu mountain		-	D/ofa kalaca
Rivers (number or kilometers)	53,00		
Name of river			
Gammo			Boloso sore
Woybo			Boloso sore
Yeche			Damot gale
Cherake Damot Gale-D/Woide			
Damot Gale-D/Pulasa			
Ixana Damot Gale-Boloso Sore			

<i>Wolecha Damot Gale-Diguna pango</i>				
<i>Bilbo</i>				Damot woide
<i>Bedesa</i>				
<i>Ella</i>				<i>Ampo koisha</i>
<i>Lsho</i>				<i>Abala marako</i>
<i>Lintala</i>				<i>Sere tawrata</i>
<i>Bissare</i>				<i>Abaya bissare</i>
<i>Bossa</i>				<i>Abaya bilate</i>
<i>Bilate</i>				<i>Abaya bilate</i>
<i>Faracho</i>				<i>Abela faracho</i>
<i>Hamasa</i>				<i>Bossa-Ofasere</i>
<i>Lintala</i>				<i>Damote Waja</i>
<i>Waja</i>				<i>Damote Waja</i>
<i>Bisare</i>				<i>Gilo Bisare</i>
<i>Takacha</i>				<i>Shola</i>
<i>Likimse</i>				<i>ofa sere</i>
<i>Omo</i>				<i>Mashinga marana Fajena mata</i>
<i>Gamo</i>				<i>koisha Nare</i>
<i>Gagura</i>				<i>Amba Mauntain</i>
<i>Kela</i>				<i>under Mushete mauntain</i>
<i>Finchawa</i>				<i>under Amba mauntain</i>
<i>Ongato</i>				<i>Tepa</i>
<i>Sankura</i>				<i>Sere Bekela</i>
<i>Woybo</i>				<i>Bombe</i>
<i>Magera</i>				<i>Bombe</i>
<i>Cherake</i>				
<i>Wodeba</i>				Damot pulasa
<i>Gamo</i>				Damot pulasa
<i>Matine</i>				Damot pulasa
<i>Bilate river</i>				Diguna fango
<i>Lintala</i>				Sodo town
<i>Ululea</i>				Areka town
Plant life (description of main local plant species)	teff,wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	teff,wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	teff,wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	
Animal life (description of main local animal species)	donkey, hen, goat,hourse, mule,sheep, cattle,	donkey, hen, goat,hourse, mule,sheep, cattle,	donkey, hen, goat,hourse, mule,sheep, cattle,	

Average precipitation in millimeters	801-1600mm	801-1600mm	801-1600mm	
Average maximal temperature	27.5(oc)	27.5(oc)	27.5(oc)	
Average minimal temperature	15.1(oc)	15.1(oc)	15.1(oc)	
Town population (main Zone Towns inhabitants):	182.707	191.477	192.820	
Town population: Male		143182		
Town population: Female		134736		
Villages population (people living in villages)	1.716.324,00			
Asphalt Roads infrastructures (kilometers)	156,8KM	115 km		
Federal gravel road		103		
Regional gravel road		214		
URRAP road		1025		
Other roads		1524		
Railways infrastructures (kilometers)				
Number of Garage	8			
Driver who have Driving license	10890			
Driver with New license receiver in every year	3051			
Renewed of license in year	6051			
Private automobile	70			
car check institution	1			
Organized traffic complex	1			
Public transport service association	3			
Loaders transport service association	2			
Number of public minibus	166			
Number of medium and higher public minibus	400			
TVs vehicle	633			
Water pipe line	47,15KM			
Erosion and waterway	56,022KM			
Fluids and erosion pipe way	7,1KM			
Erosion preventive hedgerows	37,23KM			
Bridge construction	16,5KM			
Erosional removal way maintenance	50,46KM			
Protective Water construction	4 km			
New road pathway clearance	95,5KM			
New asphalt road construction	10KM			

Asphalt maintenance	1KM			
pedal road maintenance	67,4KM			
Coble stone road construction	14,5KM			
Coble stone road maintenance	3,6KM			
New pedal road construction	15,37KM			
Electric line installation	29,22			
Butchery number	12			
<b>GENERAL FINANCIAL AND ECONOMIC DATA</b>				
Mobile-cellular subscriptions (per 100 inhabitants)				
Name of station	Service	Capacity of line	Total connected line	
<i>Areka</i>	<i>Auto</i>	<i>wireless</i>	23	
<i>Bodditti</i>	<i>Auto</i>	<i>wireless</i>	0	
<i>Bedessa subara</i>	<i>automatic</i>	512	254	
<i>Tebela</i>	<i>Auto</i>	500	0	
<i>Sodo</i>	<i>automatic</i>	<i>wireless</i>	41	
<i>Bale</i>	<i>Auto</i>	511	300	
<i>Gesuba</i>	<i>Auto</i>	500	392	
<i>Bombe</i>	<i>Auto</i>	<i>Wireless</i>	0	
Gununo	<i>Auto</i>	1000	220	
<i>Bele</i>	<i>fixed line supply</i>	0	0	
<i>Shanto</i>	<i>fixed line supply</i>	0	47	
<i>Bitana</i>	<i>fixed line supply</i>	60		
<i>Sodo</i>	<i>fixed line supply</i>	5375	4599	
<i>Areka</i>	<i>Auto</i>	1860	1860	
<i>Bodditti</i>	<i>Auto</i>	950	667	
Energy production				
Biogas with 6 metric cube	47	47	47	
Solar for home system	73	73	73	
Solar for institutional system	26	26	26	
Solar lantern	11.431	11.431	11.431	
Energy supply per capita (kWh/populaton)				
% Urban Population using improved drinking water sources	50%	73,40%	71%	
% Rural Population using improved drinking water sources	55,50%	58%	61%	1.093.580(63.6%)
% Urban Population using improved sanitation facilities	68%	68% (130.529)		
% Rural Population using improved sanitation facilities		1.093.580 (63,6%)		
GDP: Zone Gross domestic product				

GDP growth rate (annual %, const. year prices)				
GDP per capita		279,5		
Economy: Agriculture (% of GVA)				
Economy: Industry (% of GVA)		3.410		
Economy: Services and other activity (% of GVA)				
Employment: Agriculture (% of employed)	1673persons			
Employment: Industry (% of employed)	29088	3.410 persons		
Employment: Services and other (% of employed).				
Unemployment (% of labour force)	8,50%	10,00%	12%	
Labour force participation (female/male pop. %)		49,80%		
Labor force participation:total		929.091		
Labor force participation:Male		454.505		
Labor force participation:female		474.794		
Whole Salers	212			
Retail Sales	4198			
Small Industries	930			
Service Giving	2646			
Major enterprises				
Trade	637			
Service	1242			
Manufacturing	1915			
Construction	1270			
Agriculture	1924			
Registered Enterprises	singer,wood work, lessor production, metal work, ambo work, obblestone, manufacturing, construction and others	singer,wood work, lessor production, metal work, ambo work, obblestone, manufacturing, construction and others	singer,wood work, lessor production, metal work, ambo work, obblestone, manufacturing, construction and others	
Name of Enterprises				Group member
Singer				M:270; F:80; T:350
Wood work				M:432;F:113;T:545
Lessor production				M:52; F:18; T:70
Metal work				M:153; F:41; T:194

Bamboo work				M: 36; F: 8; T: 44
Coble stone work				M: 2895; F:592; T:3487
Manufacturing				M:940;F:64 0;T:1.580
Construction				M: 3.909; F: 1.118; T: 5.027
service delivering				M: 2.556; F: 1.492; T: 4.048
Business activity				M: 1.606; F:1.133; T: 2.739
Town agriculture				M: 435; F: 325; T: 760
Other				T: 2860
DISTRICT AGRICULTURE DATA				
AGRICULTURE PRODUCTS AFFECTED BY THE PROJECT				
VEGETABLE				
Extension under cultivation (square kilometers)		7663.75 hectares		
Productivity level (production/extension ratio)				
Skull cabbage	178612.98 quintal	178.612,98 quintal		
local cabbage	630706 quintal	630.706 quintal		
Carrot	117973 quintal	117.973 quintal		
Beat root	47204 quintal	4.7204 quintal		
Tomato	46061 quintal	46.061 quintal		
Red onions	296534 quintal	296.534 quintal		
White onions	43739 quintal	43.739 quintal		
Farmers concerned	70210 quintal			
Household concerned	359846 quintal			
Most frequent vegetables (and respective sale volumes) :	local cabbage, tomato, onions, carrot, etc	local cabbage, tomato, onions, carrot, etc	local cabbage, tomato, onions, carrot, etc	
Available irrigation systems (% of concerned farmers with irrigation systems available):	dame, bisare, bedessa iree pro, elle,lasho lintala, bissere, bossa, chokare, gurucho,bilate, faracho, takacha, waja, balia &ongoto, adaye tita, woibo, magera, bilate river,bitite spring	dame, bisare, bedessa iree pro, elle,lasho lintala, bissere, bossa, chokare, gurucho,bilate, faracho, takacha, waja, balia &ongoto, adaye tita, woibo, magera, bilate river,bitite spring	dame, bisare, bedessa iree pro, elle,lasho lintala, bissere, bossa, chokare, gurucho,bilate, faracho, takacha, waja, balia &ongoto, adaye tita, woibo, magera, bilate river,bitite spring	
Name of irrigation system				Location

Dam				Damot gale
<i>Bisare Irreg Pro</i>				Damot woide
<i>Bedessa Iree Pro</i>				Damot pwoide
<i>Ella</i>				Humbo
<i>Lasho</i>				Humbo
<i>Lintala</i>				Humbo
<i>Bssere</i>				Humbo
<i>Bossa</i>				Humbo
<i>Chokare</i>				Humbo
<i>Gurucho</i>				Humbo
<i>Bilate</i>				Humbo
<i>Faracho</i>				Humbo
<i>Takacha</i>				Sodo zuria
<i>Waja</i>				Sodo zuria
<i>Balia&amp;Ongoto</i>				Kindo koisha
<i>Adaye Tita</i>				Offa
<i>Woybo Irrigation</i>				Boloso bombe
<i>Magera Irrigation</i>				Boloso bombe
<i>Bitite Spring</i>				Boloso bombe
<i>Bilate River</i>				Diguna fango
Set-aside schemes and rotating systems yes/not				
Adoption of Good Agricultural Practices	local cabbage, tomato, onions, carrot, etc	local cabbage, tomato, onions, carrot, etc	local cabbage, tomato, onions, carrot, etc	
<b>2. FRUITS</b>				
Extension under cultivation (square kilometers)	8920.45 hectares			
Productivity level (production/extension ratio)	1794610 quintal			
Banana	429989 quintal	429.989 quintal		
Orange	22712 quintal	22.712 quintal		
Papaya	17,776 quintal	17.776 quintal		
Avocado	471,212 quintal	471.212 quintal		
Mango	310,551 quintal	310.551 quintal		
Satsuma	1950 quintal	1.950 quintal		
Apple	1221 quintal	1.221 quintal		
Zeyton	6,560 quintal	6.560 quintal		
Gizta	7,800 quintal	7.800 quintal		

Most frequent fruits (and respective sale volumes) :	banana,orange,papaya,mango,apple,avocado,Gizta etc	banana,orange,papaya,mango,apple,avocado,Gizta etc	banana,orange,papaya,mango,apple,avocado,Gizta etc	
Available irrigation systems (% of concerned farmers with irrigation systems available):	mentioned above	mentioned above	mentioned above	
Set-aside schemes and rotating systems yes/not				
Adoption of Good Agricultural Practices	banana,orange,papaya,mango,apple,avocado,Gizta etc	banana,orange,papaya,mango,apple,avocado,Gizta etc	banana,orange,papaya,mango,apple,avocado,Gizta etc	
<b>CEREALS</b>				
Extension under cultivation (square kilometers)	68390 hectares			
Productivity level (production/extension ratio)				
Teff	576502.675 quintal	469.782		
Barley	93602quintal	93.602		
Wheat	443084quintal	443.084		
Maize	2150450.7 quintal	1.259.412		
Sorghum	70853.1 quintal	50.352		
Bean	60187quintal	60.187		
Pea	108468quintal	108.468		
Misir	1500quintal	0		
Lentil	705677quintal	705.677		
Cheat pea	51371.3 quintal	29.211		
sun flowers	10650 quintal			
horse bean	54517.5 quintal			
field pea	49147.2 quintal			
ground net	10432 quintal			
cotton	40123 quintals			
spices	85996 quintals			
Farmers and Household concerned				280.843
Most frequent cereals (and respective sale volumes) :				
Teff	1380	1250	1380	
Wheat	850	850	950	
Barley	820	850	950	
Maize	650	650	580	
Sorghum	580	820	600	
Pea	920	850	100	
Bean	940	900	930	
Haricot bean	810	800	800	

Available irrigation systems (% of concerned farmers with irrigation systems available):	mentioned above	mentioned above	mentioned above	
Set-aside schemes and rotating systems yes/not				
Adoption of Good Agricultural Practices	teff,wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	teff,wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	teff,wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	
<b>HONEY AND BEEKEEPING</b>				
Available irrigation systems (% of concerned farmers with irrigation systems available):	mentioned above	mentioned above	mentioned above	
<b>AGRICULTURE PRODUCTS NOT AFFECTED BY THE PROJECT</b>				
<b>OTHER CROPS</b>				
Extension under cultivation (square kilometers)				
Crop production		3695 hectares		
Productivity level (production/extension ratio)				
Selit	5884 quintal	5884 quintal		
Nug	200 quintal	200 quintal		
Gomen zeri	13325quintal	13325quintal		
Haricot bean	1283642quintal	1283642quintal		
Root crops	18273353quintal	18273353quintal		
Enset	1384383quintal	1384383quintal		
<i>Kasaba</i>	2493861quintal	2493861quintal		
sweat potato	7686329quintal			
<i>ground nets</i>	1446quintal	1446quintal		
<i>cotton</i>	25980quintal	25980quintal		
<i>Cotton</i>	12892quintal	12892quintal		
<i>spices</i>	21758quintal	21758quintal		
<i>Coffee</i>	96762.6quintal	96762,6quintal		
Sun flower		0		
Berber		22961		
Zingebil		0		
Bokolo		1259412		
Mashila		50352		
<i>Maize</i>		1354103		
<i>Sourgum</i>		196556		
<i>Teff</i>		437550		
<i>Wheat</i>		409034		
<i>Barely</i>		92667		

<i>Aja</i>		0		
<i>Horse bean</i>		190221		
<i>field pea</i>		58321		
<i>check peas</i>		37747		
<i>Lentils</i>		2024		
<i>Dubulbul dinich</i>		3.146.420		
<i>Boyna</i>		128.170		
<i>Sukar dinich</i>		7.686.329		
<i>Gudare</i>		7.624.329		
Farmers concerned				Farmers and Household concerned: 280,843
Household concerned				
Most frequent vegetables (and respective sale volumes) :				
coffe				
washed coffe	6364.1493 quintal			
unwashed coffe	6851.31 quintal			
Available irrigation systems (% of concerned farmers with irrigation systems available):	mentined above	mentined above	mentined above	
Set-aside schemes and rotating systems yes/not				
Adoption of Good Agricultural Practices	oil crops( abishi, lewus, telba)	oil crops( abishi, lewus, telba)	oil crops( abishi, lewus, telba)	
<b>LIVESTOCK</b>				
Range and quantity of livestock raised				
cattle	1.146.155,00	1.260.771	1.512.925	
Sheep	155748	171.323	205.587	
Goat	250239	275.263	330.315	
Poultry	764502	840.952	1.009.143	
Hen		1.073.316		
Horse	6749	7.424	8.909	
Donkey	61466	67.613	81.135	
muel	3879	4.267	5.120	
Watering devices				
Adoption of Good Practices	donkey, hen, goat,hourse, mule,sheep, cattle,	donkey, hen, goat,hourse, mule,sheep, cattle,	donkey, hen, goat,hourse, mule,sheep, cattle,	
Appointed household member				
Quantity sold, price received and Income				

Ox	3800	5000	6000	
Cow	3000	5000	6000	
Goat	650	700	1000	
Sheep	700	750	1000	
Poultry	70	90	130	
Donkey	2000	2500	3000	
horse	5000	6000	7000	
<b>PROCESSING UNITS</b>				
<b>PRODUCERS GROUPS AND COOPERATIVES</b>				
cooperative organization				
number of cooperative		1.525		
number of member		137.242		
capital in <i>birr</i>		82.440.962,20		
cooperative union				
number of union		7		
number of member		162		
Union of capital in <i>birr</i>		19.818.356		
	total no of cooperative	male member	female member	
Farmers multi-purpose Coop	78	31064	12457	
Saving and Loan basic Coop	362	30472	17052	
Consumers Basic Coop	63	5210	1445	
Forestry Development and Conservation Coop	20	6238	1778	
Irrigation beneficiary Coop	12	1213	104	
Honey producers' Basic Coop	16	435	63	
House Dwellers Basic Coop	27	979	194	
Youth package Coop	346	10705	3076	
Fruits and Vegetables basic Coop	8	391	146	
Leather and Hides	3	90	0	
Seed Multiplication Basic	2	140	3	
Handcrafts Basic Coop	5	98	218	
Job Opportunity facilitation Basic Coop	104	954	193	
Milk and Milk products basic Coop	4	25	79	
Animals breeding and fattening basic Coop	6	72	24	
Fishery Service Coop	2	105	17	
Seedlings Suppliers basic Coop	1	8	5	
Ginger Producers' Basic Coop	1	12	0	
Loaders and un-loaders' basic Coop	2	35	0	
Solar Electric Installation Basic Coop	13	438	25	
Pottery producers' basic Coop	1	18	54	
Minerals Producing Basic Coop	1	16	0	

Energy Saviours' Basic Coop	2	15	23	
<b>OTHER AGRICULTURE MARKET DATA</b>				
cluster areas				
Frequency distribution of household size				

## 2. District Data

Year of detection: 2015 (Unless otherwise specifically indicated)				
DISTRICT	DIGUNA FANGO	KINDO KOISHA	OFFA	NOTES
Activities				
Distinct social parameter summary				
SOCIO CULTURAL DATA				
Total Population (2021):	127,810	142,242	139,843	
Male of Population	62,698 (49,06%)	69,376 (48,77%)	68,457 (48,95%)	
Female of Population	65,112 (50,94%)	72,866 (51,23%)	71,386 (51,05%)	
Pop. Aged 0-14:	62.369	66.008	64.462	
Pop. Aged 0-14 (%):	51,10%	50,09%	49,30%	
Pop. Aged 15-25:	23.772	41.865	27.317	
Pop. Aged 26-64:	32.775	21.865	37.386	
Pop. Aged 15-64			63.083	
Pop. Aged 15-64 %:	15-64= 56.795(46.9%)	48,36%	48,30%	
Pop. Aged 65-more:	2111	2.047	3.131	
Pop. Aged 65-more (%):	Over 65=2.433(2%)	1,55%	2,40%	
Dependency ratio:	113,22%	109,57%	107,04%	
Population growth rate	2,9	2,90%		
Farming activities	growing fruit and root crops	growing fruit and root crops	growing fruit and root crops	
Head of household: Total	23.026	26.501	25.937	
Head of household: Male	20.179	22.802	22.801	
Head of household: Male%	87,64%	86,04%	87,91%	
Head of household: Female	2.847	3.699	3.136	
Head of household: Female %	12,36%	13,96%	12,09%	
live births per woman (%):				
Life expectancy at birth females (years):	70-80 year	70-80 year	70-80 year	2,9
Life expectancy at birth males, (years):	60-70 year	60-70 year	60-70 year	
Mortality rate				
Infant mortality rate (per 1 000 live births)		0,30%		
Infant mortality rate below 1 years		0%		

Infant mortality rate below 5 years		0%	0	
Number of primary school in the distinct	48		0	
Number of secondary school in the distinct	4		0	
population with only primary education	28941	31.351		
population with only primary education: male	15.020	16.630	30871	
population with only primary education: male %	51,90%	53,04%	16.136	
population with only primary education: female	13.921	14.721	14.735	
population with only primary education: female %	48,10%	46,96%		
population with secondary education	7.903	4.595	5.027	
population with secondary education: Male	3.632	2.417	2.515	
population with secondary education: Male %	45,96%	52,60%		
population with secondary education: Female	4.271	2.178	2.512	
population with secondary education: Female %	54,04%	47,40%		
Total population with primary or secondary education	36.844	35.946	35.898	
% of illiterate population				
Urban population			7535	
Urban population (%)	4.769	9.589	5,93%	
Urban population: Male	2.309	4.857	4.061	
Urban population: Female	2.460	4.732	3.834	
Population growth rate		2.9		
Rural population	112,186	109.121	119436	
Rural population (%)			94,07%	
Number of Household	23.406	27769	27125	
Household size (population/household):	5	5	5	
distinct Gross Product		26.025.771,33	22.916.800,86	
Farm labor within household				

Yearly income	18.758.133,13	26.025.771,33	11520867,89	
Yearly number of residents emigrated elsewhere (other regions or abroad):				
Yearly residents emigrated elsewhere (other regions or abroad) in % of population	105	607	0	
Yearly residents emigrated elsewhere (other regions or abroad) in % of population: Male		465		
Yearly residents emigrated elsewhere (other regions or abroad) in % of population: Female	86	142	0	
International migrant stock (% of total pop.)	19		0	
New International migrant registered in the year				
Refugees stock (number):		607		
New Refugees registered in the year:	105			
Yearly Tourist arrivals		1,045 person		
Hospitals existing in the district	1			
Rural surgeries and other health points existing in the district	54		43	
Hospital beds available in the district	1		0	
Population growth rate	2.9	2,9	2.9	
Unemployment: Total	10.061	1.806	6.791	
Unemployment: Male	6.427	1.200	5.055	
Unemployment: Female	3.634	606	1.736	
Unemployment rate	8.5	6.9	8.5	
Total dependency ratio (Pop. aged 0-14 & 65+ per 100)	64.232(53%)	68.055(51%)	67.594(51)	
GEOGRAPHIC DATA				

Agricultural land (square kilometers)	46.348		37.356	
Mountain land (square kilometers)			1092,9	
Name Mountain land:	Abu Mountain 2474	Homia woshi1925 Aldada 2250 Mushate2234 Ambo2135 Kawo Dere 2160	Halaze2810 Kawo garo2800 Anuwa2650 Bushecho2570 Kerbo2800 Uke2100	
Rivers (number or kilometers)	2		2	
Name Rivers	Bilate Charake wanza	Gerera 16 Sangura25 Kela20 Fincha28 Angoto24 Gamuwa26	Manisa Wiya	
Plant life (description of main local plant species)	teff, wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	teff,wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	teff,wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	
Animal life (description of main local animal species)	donkey, hen, goat,hourse, mule,sheep, cattle,	donkey, hen, goat,hourse, mule,sheep, cattle,	donkey, hen, goat,hourse, mule,sheep, cattle,	
Average precipitation in millimeters	800-1200mm	1401-1600mm	1401-1600mm	
Average maximal temperature	22.5(oc)	25(oc)	22.5(oc)	
Average minimal temperature	17.6(oc)	12.6(oc)	17.6(oc)	
Town population (main Towns inhabitants):	10.243	9589	7895	
Town population (main town Towns inhabitants) %:		7,28%		
Town population: Male	5.046	4.734	4.146	
Town population: female	5.197	4.671	3877	
Villages population (people living in villages)	110784	122196	122.782,00	
Villages population (people living in villages) %		92,72%	0	
Asphalt Roads infrastructures (kilometers)			0	
Roads:			0	
URRAP Road	48,1 km	38KM	0	
Regional gravel ROAD		28KM	22km	
Railways infrastructures (kilometers)			41km	
Number of Garage				

Driver who have Driving license			420	
Driver with New license receiver in every year			90	
Renewed of license in year			67	
Private automobile car check institution			0	
Organized traffic complex				
Public transport service association				
Loaders transport service association				
Number of public minibus				
Number of medium and higher public minibus				
TVs vehicle				
Water pipe line		5.9KM	3.4 KM	
Erosion and waterway		2.7KM	3.25 KM	
Fluids and erosion pipe way		0		
Erosion preventive hedgerows		0.2KM		
Bridge construction		0		
Erosional removal way maintenance		0	2KM	
Protective Water construction		0	0	
New road pathway clearance		1KM	8.4KM	
New asphalt road construction		0	0	
Asphalt maintenance		0	0	
pedal road maintenance		2.2KM	8.4KM	tetar road maintenance
Coble stone road construction			0	
Coble stone road maintenance			0	
New pedal road construction		1.5KM	0.37KM	New tetar road construction
Electric line installation		3.1KM	1.24KM	
Butchery number			1	

GENERAL FINANCIAL AND ECONOMIC DATA				
Mobile-cellular subscriptions (per 100 inhabitants)				
Total connected lines	Capacity of line	Capacity of line	392	
Name of station	60	511		
Bale				
Energy production				
Biogas with 6 metric cube	47 0		1	
Solar for home system	73		7	
Solar for institutional system	26		3	
Solar lantern	11.431		1554	
Energy supply per capita (kWh/populaton)				
% Urban Population using improved drinking water sources		0%	0%	
% Rural Population using improved drinking water sources	0,00%	93,60%	92,215 (70.5%)	
% Urban Population using improved sanitation facilities	81,20%	0%	0%	
% Rural Population using improved sanitation facilities	0%	111,860(85%)	92,215(70.5%)	
GDP: distinct Gross domestic product	45,275(37.5%)	13.310.653,96		
GDP growth rate (annual %, const. year prices)				
GDP per capita	155	197	175	
Employment: agriculture (% of employed)			80%	
Employment: Industry (% of employed)		25 person	80 persons	
Employment: Services (% of employed)			1005	
Labour force participation (female/male pop. %)		48,40%		
Labor force participation:total	52.914	61.955	60.997	
Labor force participation:Male	24.911	29.099	28.949	
Labor force participation:Male%	47,08%	46,97%	47,46%	

Labor force participation:female	28.003	32.856	32.047	
Labor force participation:female %	52,92%	53%	52,54%	
Labor force participation:female /male pop%	45,10%		48%	
Whole Salers	1	1	5	
Retail Sales	86	82	273	
Small Industries	69	4	7	
Service Giving	107	47	182	
Major enterprises				
Trade	5	85	15	
Service	131	50	5	
Manufacturing	92	203	80	
Construction	0	535	0	
Agriculture	71	0	0	
Registered Enterprises	singer,wood work, lessor production, metal work, ambo work, obblestone, manufacturing, construction and others	singer,wood work, lessor production, metal work, ambo work, obblestone, manufacturing, construction and others	singer,wood work, lessor production, metal work, ambo work, obblestone, manufacturing, construction and others	
Data on enterprise				
Singer	M:13; F:2; T:15	M:15; F: 1; T:16	M:10; F:5; T:15	
Wood work	M:5; F:0; T:5	M: 39; F:9; T:48	M:13; F:2; T:15	
Lessor production	M: 0; F: 0; T: 0	M: 0; F: 0; T: 0	M: 5; F: 0; T: 5	
Metal work	M: 0; F: 0; T: 0	M: 39; F:9; T:48	M:5; F: 0; T: 5	
Bamboo work	M: 0; F: 0; T: 0	M: 0; F: 0; T: 0	M: 0; F: 0; T: 0	
Coble stone work	M: 0; F: 0; T: 0	M:641; F:124 ; T:765	M: 0; F: 0; T: 0	
Manufacturing	M:25; F:5; T:30	M:64; F:16 ; T:80	M:18; F:15; T:33	
Construction	M:24; F:6; T:30	M:1,348; F:133; T:1.481	M:50 ;F:41; T:91	
service delivering	M:71; F:83; T:154	M: 80; F:39; T: 119	M:217; F:178; T: 395	
Business activity	M:89; F:36; T:125	M: 218; F:102; T:320	M:44; F:36; T:80	
Town agriculture	M:68; F:26; T:94	M: 62; F:28; T:90	M:17; F:13; T:30	
DISTRICT AGRICULTURE DATA				
AGRICULTURE PRODUCTS AFFECTED BY THE PROJECT				
VEGETABLE				

Extension under cultivation (square kilometers)	skull cabbage & local cabbage, carrot, tomato, onion	skull cabbage & local cabbage, carrot, tomato, onion	skull cabbage & local cabbage, carrot, tomato, onion	
skull cabbage	7920	2019	3056	
local cabbage	230	2444	234	
Productivity level (production/extension ratio)				
Skull cabbage		3056	3016	
local cabbage		234	350	
Carrot	4897	1410	1275	
Beat root	0		0	
Tomato	7041			
Red onions				
White onions				
Keysir		0		
Tematim		7041	150	
Farmers and Household concerned	6709	16134	18230	
Household concerned				
Most frequent vegetables (and respective sale volumes) :	local cabbage, tomato, onions, carrot, etc	The most frequent vegetables are cabbage, carrot, onions and etc..	The most frequent vegetables are cabbage, carrot, onions and etc..	
Available irrigation systems (% of concerned farmers with irrigation systems available):	bilate river	balia and ongoto	adaye tita	
<b>2. FRUITS</b>				
Extension under cultivation (square kilometers)	local cabbage, tomato, onions, carrot, etc		672 hectares	
Productivity level (production/extension ratio)			150000 quintals	
Farmers and Household concerned	6709	16134	18230	
Household concerned				
Most frequent vegetables (and respective sale volumes) :				
banana		41600	420kg	
birtukan		360	240kg	
papaya		5136	1750kg	
avocado		47400	1560kg	
mango		68000	3900kg	
mendrin		0	0	
apple		255	500kg	

zayton	14274,7	280	5040kg	
gista		1200	0	
tomato	mentioned above	7041	2056kg	
Available irrigation systems (% of concerned farmers with irrigation systems available):		mentioned above	mentioned above	
Set-aside schemes and rotating systems yes/not	banana,orange,papaya,mango, apple, avocado,Gizta etc			
Adoption of Good Agricultural Practices		banana,orange,papaya,mango, apple, avocado,Gizta etc	banana,orange,papaya,mango, apple, avocado,Gizta etc	
CEREALS				
Extension under cultivation (square kilometers)		2864 hectars	1745 hectars	
Extension under cultivation	Teff, gebis sinde, etc		Teff, gebis sinde, etc	
Teff	83723,5	36632,5	18000	
Barley				
Wheat	21504	19972	20685	
Maize	204447,8	132688	50423	
Sorghum	7938	7917	4873	
Lentil	255	1108	5819	
horse bean	3188	6480	3900	
field pea	1860	5500	4000	
Productivity level (production/extension ratio)				
Teff		32624quintal	21460	
Gebis	2987	31750quintal	4768	
Wheat		167832quintal		
Bokolo	307164	2568	44764	
Sorghum		6000		
pea		3624		
horse bean	6709	158743		
Sinde	24520	31750	20550	
Machila	8040	2568	3102	
Bakela	1740	6000	31791	
Ater	3135	3624	4125	
Boloqe	248531	158743	55608	
Shinbura			1500	
Farmers Household concerned and		16134	18230	
Household concerned				

Most frequent vegetables (and respective sale volumes) :				
Teff	1250	1250	1250	
Wheat	850	850	850	
Barley	850	850	850	
Maize	650	650	650	
Sorghum	820	820	820	
Pea	850	850	850	
Bean	900	900	900	
Haricot bean	800	800	800	
Available irrigation systems (% of concerned farmers with irrigation systems available):	mentioned above	<i>Balia&amp;Ongoto</i>	`mentioned above	
Set-aside schemes and rotating systems yes/not				
Adoption of Good Agricultural Practices		teff,wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	teff,wheat,barley, rice, maize,bea, pea,chick pea,lentile etc	
HONEY AND BEEKEEPING				
Extension				
Productivity level (production/extension ratio)	0			
Farmers and Household concerned	6709	16134	18230	
Household concerned	0			
AGRICULTURE PRODUCTS NOT AFFECTED BY THE PROJECT				
OTHER CROPS				
Other main crops	Oil crops (abeshi, lewus, telba and other)etc.	Oil crops (abeshi, lewus, telba and other)etc.	Oil crops (abeshi, lewus, telba and other)etc.	
Extension under cultivation (square kilometers)				
Crop production	258,9 ha	224 hectares	202.4 hectares	
Productivity level (production/extension ratio)				
Selit			1776	
Nug			0	
Gomen zeri			0	
Haricot bean	156508 quintal	84082 quintal	66531	
Root crops	2167058 quintal	1261959 quintals	1051642	
Enset	77875 quintal	78750	30750	
Kasaba	38700	440673	530088	

sweet potato	855235	685278		
ground nets	0	0		
cotton	300	0		
spices	300	648		
Coffee	4663,7	3434,15	5565,02	
Farmers concerned			173713	
Oil crop		0		0
Sufi	0	0		
Berber	85	322,36	685,45	
Mashila		2568	3102	
sourgum	6507	8037	4500	0
wheat	2814	27300	8173	
barely	4487	9300	4685	
sunflower	0	0	0	
field pea	4711	2387	3624	
chek pees	85	0	2200	
lentels	0	0	0	
spices	300	648	585	
Dubulbul dinich	213222,5	139520,3	173713	
boyna	0	0	4000	
Sukar dinich	855235	685278	259316	
Gudare	1388520,5	551800	256607,5	
Cotton		0	3623	
horse bean	1833	3267	12892	
Household and Household concerned	6709	16134	18230	
Available irrigation systems (% of concerned farmers with irrigation systems available):		mentioned above		
LIVESTOCK				
Range and quantity of livestock raised				
cattle	97328	100621	106248	
Sheep	18004	10233	14281	
Goat	20625	17755	14913	
Poultry	66135	38408	59869	
Horse	94	1350	1099	
Donkey	9686	743	4400	
muel	282	1140	1232	
Hen	73787	77.224	83970	
Watering devices				

Adoption of Good Practices	donkey, hen, goat,house, mule,sheep, cattle,	donkey, hen, goat,house, mule,sheep, cattle,	donkey, hen, goat,house, mule,sheep, cattle,	
Appointed household member				
Quantity sold, price received and Income				
Ox		5000	5000	
Cow		5000	5000	
Goat		700	700	
Sheep		750	750	
Poultry		90	90	
Donkey		2500	2500	
house		6000	6000	
PRODUCERS GROUPS AND COOPERATIVES				
cooperative organization				
number of cooperative	155	112	128	
number of member	7.354	11.987	9.219	
capital in <i>birr</i>	8.345.359	4.991.625	4.951.990	
cooperative union				
number of union	1	1		
number of member	16	26		
Union of capital in <i>birr</i>	838.864	268.548		



Edited by  
Marco D'Agostini

## II. Poems by Wolaita students awarded as part of the awareness events for World Water Day

### Uses of water

Water is essential for all,  
Water for drinking,  
Water for Transportation,  
Water for Sanitation,  
Water for Irrigation,  
Water is life  
Water is life

Water has a vital role,  
For human beings,  
For animals,  
For plants,  
Water plays a decisive role in our life  
Water plays a decisive role in our life

Water is used for cleaning  
for cooking  
for dissolving  
as solvent  
so, water is necessary for us  
water is necessary for us

Without water we can't live  
we can't stay in life  
we can't survive  
So, water is life  
water is life

Water is useful  
for farming  
for industry  
for plants  
for animals  
so, water is life  
water is life.

*Isibalem Belete  
Dekeye Primary School*

## Water

This water is wonderful in nature.  
The basis of all living things,  
It has no Smell and it is tasteless,  
But it is unique in that it has a great role to play in the creation of the world.

To make food and then to drink,  
For personal hygiene and home service,  
For factory and power generation,  
Without water, it would be impossible to get all this.

To moisturize up the dry,  
Great for irrigation,  
Nothing is there life determinant like water.

Cover the world with 75 percent,  
It traveled the world like a river and ocean,  
It willingly submits to the will of all,  
Cultivate the land as a farm,  
There is no life without water,  
Without it, life would be impossible.

Our body to be bent,  
Our whole body to be soft,  
We breathe air,  
We bow our heads and walk,  
Because there is more water in our bodies than anything else.

And the vegetation that does not fall off,  
To Standing upright,  
It is because water, not iron inside it.  
So let us know that water is life,  
Let's conserve water from waste.

*Phaulos Yoseph*  
*Diguna Fango, Grade 6 Student*



Edited by  
Marco D'Agostini

## Water

Water is the greatest gift of nature,  
Made from a mixture of oxygen and nitrogen,  
Fill the earth and its fullness,  
It has great value for money.

It gives life,  
It refreshes life,  
It let plants to make their food and to feed the world,  
It springs from the earth,  
It rains from the sky,  
It is the foundation of all living things.

Both human and all living  
How can you live without water?

All creatures drink when they are thirsty,  
People cook the food to eat,  
Not with fuel, not with oil,  
Without water, all of this would never happen.

Without water, there is no life.

It is found in 60 Percent in the human body,  
The mind works,  
And the heart beats,  
And our bodies will rise and fall,  
Our joints are flexed,  
Every part of our body has never been dry.

All of this is what the human body stands and walks.  
Never with water, but what else?

*Nebiyou  
Duguna Fango, Grade 5*