

*Agriculture Recovery Project for the War Affected
Communities of North Shewa Zone, Amhara Region,
Ethiopia*



*A Project Prepared by College of Agriculture and Natural
Resource Sciences with Financial Support from the Office of
Vice President for Research and Community Service*

February, 2022

Debre Berhan, Ethiopia

Project Preparation Teams

1. Dr. Mekete Bekele – Leader
2. Mr. Girma Teklehana-Secretary
3. Mr. Tafesse Altaye-Member
4. Dr. Kassahun Bekele-Member

List of Acronyms

AGSBMC	Amed Guya Sheep Breeding and Multiplication Center
ARP	Agriculture Recovery Project
DBU	Debre Berhan University
ETB	Ethiopian Birr
FAO	Food and Agriculture Organization
FTC	Farmers Training Centers
HH	Households
NGO	Nongovernmental organization
VC	Value Chain

List of Tables

Table 1: Estimated damage and cost on infrastructure	4
Table 2: Estimated damage and cost on irrigation.....	5
Table 3: Damages and losses	6
Table 4: Damage to the agricultural sector	7
Table 5: Disaster on Amed Guya Sheep Breeding and Multiplication Center due to the conflict .	9
Table 6: Budget summary by project components and funding sources (Birr)	25
Table 7: Annual budget summary by project components (Birr)	26
Table 8: Risk Identification and Mitigation.....	29

List of Figures

Figure 1. Damage to public and private buildings 4
Figure 2. Damage to irrigation facilities/equipments 5
Figure 3. Damage to crops 6
Figure 4. Injury to livestock..... 8
Figure 5: Location map of project areas 24

List of Tables in the Appendix

Appendix Table 1: Project cost estimates and expected budget sources for crop production and natural resources recovery (Birr)	32
Appendix Table 2: Project cost estimates and expected budget sources for livestock production recovery (Birr)	34
Appendix Table 3: Project cost estimates and expected budget sources for restoration of infrastructures, asset and other facilities (Birr).....	36
Appendix Table 4: Project cost estimates and expected budget sources for capacity building for recovery (Birr)	37
Appendix Table 5: Project cost estimates and expected budget sources for project coordination and management (Birr)	38

Table of Contents

Project Preparation Teams	i
List of Acronyms	ii
List of Tables	iii
List of Figures.....	iv
List of Tables in the Appendix.....	v
Table of Contents	vi
Executive Summary	viii
1. Introduction	1
1.1 Project Rationale	1
1.2 Objectives.....	2
1.3 Concepts.....	2
2. Situation analysis	3
2.1 Importance of agricultural sector in the affected areas/communities	3
2.2 Socio-economic aspect, damages and losses in agricultural sector	3
2.2.1 Socio-economic aspect	3
2.2.1 Assets, infrastructures and other facilities.....	3
2.2.2 Crop-sub sector.....	5
2.2.3 Livestock sub-sector	7
3. Strategies for rehabilitation and recovery of the sector.....	10
4. Projects description	10
4.1 Productive assets recovery	10
4.1.1 Crop production and natural resources recovery	12
4.1.2 Livestock production recovery	16
4.2 Restoration of infrastructures, asset, and other facilities	19

4.3	Cross-cutting issues.....	20
4.4	Capacity building for recovery.....	22
4.5	Project coordination and management.....	23
4.6	Project locations and beneficiaries/target groups.....	23
4.7	Expected outputs and Outcomes	24
4.7.1	Expected output	24
4.7.2	Expected Outcomes	25
4.8	Project budgets and cost estimates.....	25
5.	Implementation arrangements	26
5.1	Institutions/stakeholders/partners.....	26
5.2	Monitoring and evaluation	26
5.3	Risks and mitigations	28
5.4	Sustainability.....	31
6.	Appendices	32

Executive Summary

Farmers in the North Shewa zone of Amhara Regional State heavily depends on mixed agriculture for their livelihoods. The war has caused tremendous damages and losses to the productive assets and supportive agricultural infrastructures and makes the community vulnerable to food insecurity. It has aggravated the socio-economic conditions of the population. To curve the situation and improve the livelihood of affected communities a recovery projects have been designed. The project is expected to contribute for the recovery and improvement of food and nutrition security through the restoration of productive assets, agricultural infrastructures and capacity building of affected communities and their institutions. The project will focus on the nine war affected districts and communities of North Shewa zone. The potential target groups will comprise about 10,000 households which directly or indirectly affected by the conflict. The project comprised different components: recovery and improvement of crop and livestock production by promoting relevant packages that include inputs and technical capacity building, restoration of assets and infrastructures with their facilities. Support will be provided to fill in some of the identified gaps and strengthen the beneficiary households and institutions.

The project is expected to be funded by the government, non-government organizations. In addition the beneficiaries are also expected to contribute in cash or kind (such as labour contribution). An estimated amount of about 4,186,537,224 Ethiopian Birr is required for the three years life time of the project.

1. Introduction

1.1 Project Rationale

Agriculture remains an important sector and the main sources of livelihoods in North Shewa Zone. It is dominated by smallholder farmers engaged in mixed crop-livestock production. However, smallholder farming is largely characterized by a subsistence-oriented production system, low levels of modern inputs, low productivity and heavy dependence on rainfall. Smallholder agriculture apart from its vulnerability to the vagaries of nature, particularly unpredictable rainfall and recurrent drought, conflict severely disrupt the timely routine agricultural activity and affect farmers' livelihoods. Food insecurity and malnutrition remain an aftermath after conflict, with affected/exposed population unable to meet their basic food requirements. Households (HHs) live in rural areas whose livelihoods depend exclusively on agricultural production are the most vulnerable communities which needs immediate agricultural assistance to restore their production, improve their livelihoods and reduce dependency on food assistance.

Since 2021, the northern part of Ethiopia has experienced a war that has led to great losses and damages including the agricultural sector. The conflict extended into North Shewa of Amhara region including districts such as Efratana Gedim, Menze Keya Geberiel, Menz Mama, Menz Gera, Mojana Wedera, Kewet Tarmaber, Antoskiya Gemeza, and Mida Woremo. In the meantime great damages and losses has occurred to the private and public agricultural sectors, including looting and destruction of agricultural produces, implements, institutions and livestock. There is an urgent need for immediate relief-oriented assistance, which is taken care of by the government and aid agencies as immediate humanitarian assistance. However, households facing deprivation of their agricultural assets and acute food insecurity, require support to survive, prevent negative coping mechanisms (e.g. selling assets, migration) and prepare them for self-sufficient harvests.

In order to increase the resilience of farmers and ensure proper food security and nutrition, Debre Berhan University has initiated a number of projects in North Shewa zone focused on addressing negative war-related events, and the Agricultural Recovery Project (ARP) is one of them. The project will contribute to improved food and nutrition security of targeted communities through

the restoration of productive assets, basic infrastructures and capacity of HHs affected by the war. ARP will provide agricultural and livestock support packages that include inputs, extension and credit services and technical capacity building, and will build basic supporting agricultural infrastructures (offices, veterinary clinics, farmers training, centers, irrigation, etc.). It will also intervene to improve information systems for food security, animal health surveillances, introduce proper land management systems and promote crop and livestock based livelihood diversification activities as part of a "building back better" strategy. The project proposal is formulated following damage and needs assessment of war affected districts of North Shewa zone, targeting potential beneficiaries of about 10,000 households, which are the direct or indirect victims of the war.

1.2 Objectives

The main objective of this project is to improve the food and nutrition security, and improve the livelihood status of farmers in the war affected districts of North Shewa Zone. The specific objectives of the project are the following:

- To reconstruct the private and public agricultural infrastructures and restore facilities
- To bring comprehensive recovery through promotion of crop and livestock production packages and technical support to the beneficiaries.
- To build the capacities of farmers and supportive stakeholders for resilience of their production system.

1.3 Concepts

War has two main types of effects on a society and economy: destruction (total or partial) of physical assets, and subsequent changes or modifications to economic flows in the affected area. The following definitions of war effects have been adopted from FAO:

- **Damage:** the total or partial destruction of physical assets and infrastructure in war-affected areas, expressed as replacement and/or repair costs. In the agriculture sector, damage is considered in relation to standing crops, farm machinery, irrigation systems, and livestock shelters, fishing vessels, pens and ponds.
- **Loss:** refers to the changes in economic flows occurring as a result of the war. In agriculture, loss may include decline in crop production, decline in income from livestock products,

increased input prices, reduced overall agricultural revenues, higher operational costs and increased unexpected expenditures to meet immediate needs in the aftermath of the war.

2. Situation analysis

2.1 Importance of agricultural sector in the affected areas/communities

Agriculture sector activities are the primary livelihood for more than 84.3 percent of North Shewa zone population and support a large proportion of people in rural areas. Agricultural activities are also an important contributor to urban area economies through activities like storage, processing, and trade. Women farmers constitute about 42 percent of the total farmers engaging in agriculture and livestock rearing. If not directly engaged in agricultural production activities, the majority of rural populations undertake activities and services closely related to the sector, such as procuring inputs, processing, transport, and trading among others.

2.2 Socio-economic aspect, damages and losses in agricultural sector

2.2.1 Socio-economic aspect

Among the affected productive sectors, the war highly affects agricultural sector. There are human and material damages. Based on the rapid assessment conducted by DBU staffs, farmers were killed which is also witnessed by field observations. Majority of the farmers in the war affected areas are subsistence of which they produce for their own consumption. Due to the war along with other factors, the price of goods and services are rising. Most farmers lost their stored foods which were looted by the terrorist group. There are a lot of unemployed youths in rural areas. Due to these facts, affected families need humanitarian and financial assistances. Youths and females need job opportunity to cope up with the real problem.

2.2.1 Assets, infrastructures and other facilities

2.2.1.1 Damage information on private- and public-owned houses/buildings

Almost 200 private houses in all affected districts, 6 farmers training centers (Mojana Wodera, Menz Keya, Kewot, Tarmaber, Menz Mama and Efrata Gidim), 6 agriculture development offices

(1 total damage – Menz Gera and 5 partial damage- Kewot, Menz Mama, Efrata Gidim, Tarma Ber & Menz Keya), 5 animal health centers (Mojana wodera, Tarmaber, Menz Gera, Efrata Gidim and Menz Keya) were destroyed by the rebel groups. Some farmers also lost their home appliances. In addition to the physical damage a lot of documents and computer files, containing data filed for many decades, have also been lost.



Figure 1. Damage to public and private buildings

Table 1: Estimated damage and cost on infrastructure

S.N	Assets	Damage		Estimated cost
		Partial	Total	
1	Private houses with apparels and home appliances	200	100	315,000,000
2	Public buildings with offices equipment's and supplies	6	2	12,500,000
3	Animal health centers with equipment's and medicines	5	2	19,000,000
4	Farmers training centers with equipment's and facilities	10	7	20,000,000
	Total			366,500,000

2.2.1.2 Damage Information on Irrigation and facilities

The war has destroyed many things dear to human life. Important services have simply disappeared. Irrigation systems were attacked during the war. In war, however, such civil structures are not supposed to be targeted.



Figure 2. Damage to irrigation facilities/equipments

Table 2: Estimated damage and cost on irrigation

S.N	Location of Irrigation Facility	Extent of Damage and Cost				Number affected	
		Type of Damage & Amount of Cost				Ownership	
		Partial Damage	Repair Cost	Total Damage	Replacement Cost	Public	Private
1	District irrigations	6	20,000,000	-	-	100,000	-

2.2.2 Crop-sub sector

The war directly destroyed croplands, agricultural implements and infrastructures. Farms became battlefields, inevitably leading to the destruction standing crops due to trampling and amunitions.in some areas the rebels intentionally destroyed horticultural crops and permanent plantations.

Besides to damages and losses of seasonal and permanent plantations in the field looting of stored gains reserves and food items were prevalent. Moreover, farmers were away from their homes and agricultural fields to accomplish seasonal crop cultivation. , eventually considerable loss of crops had occurred due to delayed/untimely harvesting of matured crops.



Figure 3. Damage to crops

Table 3: Damages and losses

S.N	District	Hectare
1	Menz Keya	175
2	Menz Gera	200
3	Menz Mama	150
4	Majana Wodera	100
5	Tarmaber	150
6	Kewot	160
7	Shewa robit	80
8	Efratana Gidm	300
9	Antsokia Gemza	90
	Total	1405

Table 4: Damage to the agricultural sector

S.N	District	Livestock	Crop	Fruits and vegetables	Veterinary clinic	Total
1	Majana Wodera	390,000.0	7,923,037.5	48,021,359.4	246,910.8	56,581,307.7
2	Tarmaber	41,811,800.0	7,923,037.5	48,021,359.4	226,020.6	97,982,217.5
3	Shewa robit		7,923,037.5	48,021,359.4	172,300.0	56,116,696.9
4	Kewot	3,745,600.0	7,923,037.5	48,021,359.4	905,997.0	60,595,993.9
5	Efratana Gidm	3,746,800.0	7,923,037.5	48,021,359.4	2,993,732.0	62,684,928.9
6	Menz Gera	91,800.0	7,923,037.5	48,021,359.4	15,717,948.2	71,754,145.1
7	Menz Mama	1,531,000.0	7,923,037.5	48,021,359.4	11,200,535.4	68,675,932.3
8	Menz Keya		7,923,037.5	48,021,359.4	905,979.2	56,850,376.1
9	Antsokia Gemza					
	Total	51,317,000.0	63,384,300.0	384,170,875.0	32,369,423.2	531,241,598.2

2.2.3 Livestock sub-sector

Damages and losses to both the private and public livestock sector has been witnessed in the war affected areas of north Shewa zone.

2.2.3.1 Privately owned livestock damages and losses

Large number of farm animals, particularly small ruminant (sheep and goats) and poultry were killed in the conflict, mainly looted and slaughtered by the aggressors. Mostly, communities with limited livelihood assets raise these species as a livelihood resource and are the worst affected. Apparently, this is not only represent a major loss of assets, and loss of purchasing power for the affected families, but it also leads to a decline in the consumption of meat, milk, and eggs in the diets of affected people. Moreover injuries, weakness and loss of productivity are evident among remaining livestock, which become vulnerable to diseases and feed shortage. Many livestock offices and veterinary clinics which serve the community were badly damaged and office materials, veterinary drugs and equipment's were looted.



Figure 4. Injury to livestock

2.2.3.2 Amed Guya Sheep Breeding and Multiplication Center

Amed Guya Sheep Breeding and Multiplication Center is public owned ranch. There has been a continuous importation of purebred exotic sheep for genetic improvement of the local sheep breeds through cross breeding. Amed Guya Sheep Breeding and Multiplication Center (AGSBMC) has been working in the maintenance of pure breeds, crossbreeding and dissemination of crossbred rams. The center was operating with about 1800 sheep comprising pure and crossbreds of the local and exotic sheep. In addition there were 11 crossbred cows and over 100 chickens kept in the center.

All sheep, 11 crossbred cows and about 100 poultry were looted from the center during the aggression/ invasion period. Later after peace restoration considerable numbers of sheep and all the crossbred cows were returned to the center by the surrounding keen farmers who kept the flocks for a while. But none has been recovered regarding the chickens loss. Moreover, huge damage and losses happened on the office and laboratory infrastructures and stored materials and consumables. Vehicles have been also looted. Table – shows the extent of damages and losses summarized by item categories, generated from the centers report. Over all, during the period of envision an estimated total loss of 13,046,444 ETB (over 13 million Ethiopian Birr) has been reported by the center.

Agriculture Recovery Project (ARP)

The immediate critical problems faced are inadequate feed and veterinary supplies to maintain the remaining flocks. Though the irresponsible destruction of different infrastructures and equipments is a disaster, the unrecoverable loss of different records in the ranch is a tragedy. Subsequently phased interventions have to be in place for its full recovery and modernization of the AGSBMC.

Table 5: Disaster on Amed Guya Sheep Breeding and Multiplication Center due to the conflict

Items category and descriptions	Unit	Quantity	Unit price	Total Price
Office building	no	1	2,000,000	2,000,000
Office and lab furniture and consumables	Lump sum			5,475,998
Computer and printers, copiers	Lump sum			630,000
Vehicles	no	3		2,000,000
Toyota pickup	no	2	500,000	1,000,000
Land cruiser	no	1	1,000,000	1,000,000
Vehicle accessories				170,500
Generator	no	1	30,000	30,000
Sheep (Pure and crossbred of Awassi, Dorper and Menz)				2,051,150
Pure Awassi ram	no	33	5,400	178,200
Pure Dorper ram	no	2	7,600	15,200
Awassi crossbred ewes	no	130	5,850	760,500
Menz ewes	no	300	1,500	450,000
Awassi crossbred lambs	no	100	1,875	187,500
Dorper crossbred lambs	no	50	1,875	93,750
Menz ram	no	33	2,000	66,000
Doper ewes	no	100	3,000	300,000
Feed (hay and furishka)				356,000
Hay	ton	112	3,000	336,000
Furishka	qt	10	2,000	20,000
Veterinary lab equipments	lumpsum			273,500
Livestock medicines	Lump sum			59,296
Total estimated loss				13,046,444

3. Strategies for rehabilitation and recovery of the sector

Strategies approached to be adopted for rehabilitation and recovery of the affected areas and communities:

- Ensure community engagement and contribution through organization and mobilization of the community
- Encourage stakeholders involvement and cooperation
- Adopt climate smart approach to safeguard the environment
- Abide to government policies, rules and regulations
- Strengthen the beneficiaries transition from emergency to recovery and relieve of dependency

4. Projects description

4.1 Productive assets recovery

The objective of this component is to restore the productive assets of the targeted communities and households. The expected outcome is “enhanced recovery of the target households’ crop and livestock production capacity in the target areas”. The component includes three subcomponents: a) Recovery of crop production; b) Recovery of livestock production; and c) Capacity building for recovery. With proper implementation of the project components agricultural productivity will be improved and household livelihoods diversified. This will be accompanied by capacity building of beneficiaries and institutional stakeholders to ensure sustainability of activities Crop and livestock based packages are proposed to address food security and diversify household livelihoods for improved food security and livelihoods diversification The expected outcome is restoration of their assets base, improved food security through increased on-farm productivity. Some of the recommended packages/activities are elaborated below.

Crop-based packages: The project will promote production of suitable crop varieties to reduce the risk of crop failure and ensure food and nutrition security. Implementation of this activity will involve offering a starter-pack for food security to vulnerable households. The package of inputs will consist of varieties of cereals, pulses vegetables, fertilizers pesticides and hand tools. A target

of 10,000 households will receive the crop based package. The package will be accompanied with extension advice through local agricultural offices. The improved crop production package will be complemented with the sustainable land management practices

Livestock-based packages: Individual farm households will be eligible for assistance to develop and diversify their livelihoods through livestock based packages. Small stock (local chickens, goats and sheep) are found around the farm homesteads for a dual purpose of providing animal protein and easy liquidation to access cash for household needs. Interventions, such as poultry/chicken, sheep and goat rearing and fattening will be undertaken as livelihood diversifying and risk reducing strategies. Consideration will be given to appropriate livestock types and interventions to meet the priority needs of the affected households in the target districts. Efforts to promote improved husbandry like water, feed and health management will be implemented. The livestock package will target 10,000 households. The beneficiary households will be required to provide management inputs: feeding, watering and shelter for the livestock as part of their counterpart contribution. For livestock packages the livestock recipients may be organized into small groups of 5-15 households in order to participate in a pass-on scheme which will strengthen social bonds between member households with peer pressures used to ensure that project rules are followed.

In all cases the livestock and crop based packages and support activities recipient households may decide to come together as a group for ease of implementation. Selection of activities will be demand driven and drawn from a menu of options (livestock and crop based packages). Communities will be informed, through awareness creation campaigns, about the menu and the associated terms of partnership for each activity. By offering households the choice of technical packages, they will be able to select an activity that matches their skills, resources and market demands. Local leadership and community members will be instrumental in supporting the beneficiary households, ensuring effective participation and transparency.

4.1.1 Crop production and natural resources recovery

Emergency food aid for affected communities is undergoing by the government and aid agencies. It is expected to continue for those who desperately need it up until they are able to afford in cash or produce clearly maturing crops. In the meantime the affected communities have to engage to produce early maturing crops (vegetables) in their home garden and irrigable crop lands. Following intervention are proposed for crop production and natural resources recovery.

1) Distribution of improved crop variety

For many poor farmers in Ethiopia, crop diversification will play an important role in escaping poverty and lifting their daily nutrition intake towards recommended levels. Younger family members may especially benefit from opportunities to access improved nutrition. The main outcome is increased diversification and resilience of the most vulnerable rural livelihoods in the war affected areas.

Output 1.1: Improved crop varieties are provided to, and conservation agriculture e practiced at the war affected areas.

This output promotes improved crop selection in rural farming households and enables access by farmers to enhance and sustain food security during dry spells and periods of drought. The use of improved seed varieties needs to be promoted to increase the food security of farmers.

Activity 1.1.1: Work with research institutions and seed banks to select and transfer improved crop varieties

Activity 1.1.2: Train farmers on the use of improved crop varieties and efficient farming techniques;

Activity 1.1.3: Establish participatory plant breeding schemes at village level which enable access of farmers to seed banks and conserve the diversity of plant genetic resources.

Output 1.2: Improving access to quality agricultural inputs (seeds)

Activity 1.2.1: Provision of agricultural production inputs (crop and vegetable seeds, hand tools and treadle pumps)

Activity 1.2.2: Provision of technical support and facilitation

2) Recovery of horticultural crops and permanent plantations

The horticulture interventions will help in optimized use of available land for vegetable cultivation), making agriculture viable under a changing context and will also helping to achieve the objective of income and risk diversification.

Output 2.1: Establishment and/or improvement of home gardens (fruits and vegetables)

Activity 2.1.1: Providing vegetables seeds (Watermelon, lettuce and potato), fruit seedlings (banana and papaya), and one spice i.e. basil, small plastic tunnels, small-scale drip irrigation systems and small equipment/tools to enhance the productivity of traditional home gardens.

Activity 2.1.2: Establishment of demonstration plots, integrated/mixed kitchen gardens that will integrate living fences (for fodder, fuel wood), and diversified vegetable/fruit production. The technology demonstrated will be based on: locally available materials in order to promote replicable and affordable approaches; and improving/reviving traditional practices that have shown their effectiveness. The demonstration gardens will be used to build the capacity of beneficiaries and spread the technology on a broader scale.

Activity 2.1.3: Raising awareness and building the capacity of beneficiaries to enhance the productivity of their gardens using simple, affordable and appropriate technologies.

Output 2.2: Increased amount and variety of nutritious food available for target families

Activity 2.2.1: Identifying and promoting nutritious food for home gardening

Activity 2.2.2: Introduction of improved horticulture varieties to the affected families

Diversity of bio-geographic environmental zones and altitudinal variations provide favourable conditions for growth of many horticulture crops including temperate and sub-tropical fruits. But farmers opt for mono-cropping rather than tree-based farming, but have the risk of complete loss of harvest in case of any sudden weather events or pest-attacks. In order to lessen the risk, a combination of crops is proposed. It is proposed to acquaint farmers about tree based farming systems which are advantageous over mono cropping in the climate change scenario.

Output 2.1: Inclusive Value Chains Development

This output has two aims: to create an enabling business environment for agribusinesses in selected value chains (VC) with strong backward linkages with smallholder producers; and to strengthen the capacities of the farmers and other stakeholders of those VCs.

3) Improve water availability for irrigation and promote efficient water use

Ethiopia's agriculture is largely dependent on seasonal rainfall but the amount of rainfall has not been adequate to sustain crop production, leading to serious food insecurity. Available estimates indicate that about 50.6% of the Ethiopia people lack access to adequate food which is more severe in the arid and semi-arid lands. Hence, in order to have secured food production, there is a need to minimize dependence on rain-fed agriculture by utilising water resources for irrigation under sustainable environmental management.

In the proposed project area there is the problem of water scarcity and drying of springs because of water run-off and lesser retention and storage capacity of water. So, for building the resilience of the local community to water resource development as well as efficient use of water by the community is proposed.

Output 3.1: Water capture and storage capacities enhanced to ensure sufficient irrigation water supply during dry periods

Activity 3.1.1: Rejuvenation of Natural Springs

A total of 15 springs will be identified and rejuvenated in the project period. For each Natural Spring rejuvenation activity, 50 hectares will be treated through various rain-water harvesting activities such as creation of staggered trenches, creation of small ponds, and vegetative plantation for soil and water conservation in the recharge areas. For selection of sites and for other operational issues, a FRGS will be formed which will consist of farmers and technical expert from districts. It will ensure maximum coverage of the families living in the recharge areas and benefitting from this activity. After finalization of recharge areas and micro-planning of the water-harvesting structure in each village, a Water User Group will be formed which will consist of users of water under the particular activity. Main responsibility of this user group will be operations and management of the water harvesting structure and sharing of benefits amongst the participants.

The rejuvenation of springs would also help in much needed promotion of economic activities and reduction in drudgery of women in the areas.

Activity 3.1.1.2: Roof Top Rain Water Harvesting

The major portion of land is dependent on the rain water only, which has adverse effect on agricultural production. Despite plenty of resources the inhabitants of the area are dependent upon rain water. For retention of water at an individual household, it is proposed to introduce rain-water harvesting structures, through which a total of 500 families that have concrete houses and rooftops to collect and channel the rainwater will be targeted. In the selected villages, farmer's field lies in the lower terrain while the houses are on the higher terrain, (terrace like structure), hence water stored in the tank will be transferred to field through gravitational force. The average water that can be collected per household will be around 15,000 liters. This will be used mainly for irrigation and household use. The purpose here is to provide access to water near the household when other sources of water are not available. This is proposed as decentralized intervention for effective rainwater collection, storage and distribution.

Output 3.1.2: Adoption of efficient water use practices and technologies

Activity 3.1.2.1: Efficient water use practices and technologies will be promoted under the project to reduce water scarcity and to enable judicious use of water.

For judicious and efficient use of water for irrigation purposes, drip irrigation facilities will be provided to the participants to avoid the wastage of water during irrigation. It is a quite popular and prevalent technology which enhances production with lesser use of water and labour. Even though, it has lower penetration in the areas, as it has a high initial investment cost. Hence, the project will target to include the participants with flat land and lesser availability of water for irrigation as well as families not covered under Spring Rejuvenation activity will be covered on a priority basis under this activity. It is also proposed to link with the other components like high value vegetables and horticulture plantation.

4) Community Based Sustainable Forest Management

Agroforestry is one of the basic principal biological methods of conservation and assists in maintenance of soil cover. It is designed to create barrier and cover approaches through supplementary and direct uses of trees and shrubs for soil and water conservation. The integration

of tree and annual crops provides potential to improve soils through nutrient cycling and supplementing organic matter. The trees, by covering the soil, guard it from direct exposure to the sun and avoid loss of soil moisture in times of drought and during dry spells. This results in the improvement of soil structure and texture, and enhances food security. In addition, risks of wind- and water-induced soil erosion are greatly reduced.

Output 4.1: Micro-watersheds are protected and rehabilitated through Farmer- Managed Natural Regeneration to increase natural water retention and reduce erosion

Community-based Natural Resource Management is one of the most important manifestations of true decentralization as it relates to communal control of natural resources. Community-based management of forests and other natural resources plays a crucial role in improving the livelihoods of the poor. The benefits of Community-based Natural Resource Management range from job creation to substantial management rights and long-term revenue-generation. Community forest schemes, which incorporate methods such as enrichment planting, natural regeneration and artificial regeneration, can be applied to conserve remnant forest and give poorer and particularly landless households much-needed access to income earning opportunities while improving soil conservation as well as water conservation activities.

Activity 4.1.1: Based on community input, select relevant tree species for regeneration and reforestation purposes and identify Communal Forest User Groups and other community/farmer-based local groups and institutions which can be engaged in community-based rehabilitation, reforestation and natural resource management

Activity 4.1.2: Support regeneration of existing vegetation and conserve remnant natural forests through soil conservation and water harvesting techniques

Activity 4.1.3: Undertake additional community-based reforestation works (engaging the bulk of landless laborers in the target area) in heavily degraded areas to complement regeneration of watershed areas

4.1.2 Livestock production recovery

Livestock production is essential to the livelihoods of numerous households in the war affected areas. It is an integral part of the range of activities that farming families are engage in. Livestock

serve a number of purposes, like providing food, cash income, draft power, and manure to preserve soil fertility and enhance productivity of staple crops and also as fuel source. The role of livestock as a savings system is also well known. The livestock sector suffered enormous damage during the war and is only slowly recovering despite strong demand for animal products (meat, milk products, eggs and honey). A large part of the population does not have sufficient capital to restock or acquire livestock. The development of livestock farming in the affected areas is facing many constraints. For those owning animals, productivity is very low because of limited access to technical support and animal health services, credits, inadequate infrastructure, shortage of feeds, and low genetic potential that would lead to improved productivity.

Farmers, who depend exclusively on agricultural production particularly needs immediate agricultural assistance to restore their production, improve their livelihoods and reduce dependency on food assistance. The loss of livestock during the war is expected to causes disruptions in both current and future income of the producers and demand of the consumers, since livestock especially large animals have life cycles that span many years. For these reasons, to restore livestock production and improve the livestock productivity and wellbeing of the affected communities sustainably a combination of flexible and multidimensional interventions in the short, medium and long-term are required. To this end following synergistic and complementary interventions are suggested.

1) Feed development interventions

Feed is the principal input of livestock production accounting for more than 70% of the cost of production. Currently, the major feed sources for livestock in the war affected areas are natural grazing lands and crop residues. These feed resources besides their low nutritional quality the availability are limited. So it is importance that produces should develop the ability to supply enough feed through adoption of different forage production strategies and feed value enhancement technologies for low quality roughages. To relief the shortage of planting materials for improved forages, seeds/seedlings should be provided to the desperate framers in the war affected areas. Moreover, training and demonstration on different feed development technologies will be provided to the technical staffs and farmers. In the long run production of forage planting should be promoted locally.

2) Animal health interventions

Significant livestock losses can follow post conflict when animals that are already weakened by malnutrition succumb to parasites and other diseases. Vaccination, deworming and other primary animal health care may prevent some of these drastic losses due to death and morbidity. Hence restoration of the veterinary facilities and provision of supplies is necessary to maintain the health and productivity of different types and classes of livestock. Moreover, building the capacity of para vets and local communities will have an advantage over the long term to sustain livestock health and their role in the livelihoods of farmers.

3) Livestock genetic improvement

In the long term livestock genetic improvement for preferred traits shall be promoted to improve the performance of livestock and increase their role in sustainable livelihoods improvement and marketing. Installment of breeding strategies and provision of assisted reproductive technologies should be in place. The restoration of *Amed Guya* Sheep Breeding and Multiplication Center needs immediate action.

4) Training and education

Training and education programs are important to improve productivity and sustainability in agricultural systems. Implementing programs to fund advanced training (e.g. trainings in animal health care, animal production, nutrition, breeding, dairy, extension workers etc.) can all increase local capacity, improving sustainability and having a long-term impact on the local communities. For instance, DBU can foster a scholarship/sponsored program for the affected areas/communities.

5) Financial services

Financial interventions should include the provision of credit to livestock owners who are affected by the conflict, and a method for saving assets, which may involve grants, loans, and cooperative savings accounts.

6) Restocking and livestock packages

Restocking programs aim to supply livestock owners with breeding animals to replace what they lost during the war and restore livelihoods. Poultry and small ruminants (e.g. sheep and goats) were the most devastated than other livestock species and needs to be considered on implementation of restocking. Young females are most important for breeding to naturally restock the herds. During restocking certain aspects like source of the animal, breed of the animal, time of restocking, availability of inputs, (feeds, vaccines, etc.) and the costs and, benefits, etc. should be considered.

4.2 Restoration of infrastructures, asset, and other facilities

1) Private- and public owned buildings/houses

Private as well as public owned building along with their appliances and equipment's were looted by the terrorist group. So, these necessary assets must be rehabilitated for the ease the impact of the war.

a) Private houses and properties

Some farmers' houses are totally destroyed whereas most farmers lost such properties as agricultural implements, seeds, herbicides, pesticides and others. So, these farmers need immediate financial as well as technical assistance for their restoration on the prewar situation.

b) Public buildings and equipment's

Government office buildings were also destroyed (Menz Gera) and others are affected in the sense that their equipment and supplies are looted. This is, therefore, for the sake of easing the consequence of the war on the affected farmers through the encouragement of political leaders and civil servants of the agricultural sector, these buildings has to be reconstructed and refurnished with the necessary equipment's and supplies.

2) Irrigation and other facilities

Irrigation intervention must be part of recovery project, which is also understood as part of productive investment for increasing agriculture productivity.

After the initial discussion of the recovery project, brief description of the affected irrigation systems; and documentation of farmer to-farmer training process during intervention has to be made. The purpose of the farmer-to-farmer training program is to stimulate the transfer of experience from farmers in well-managed systems to those in poorly-managed systems through site visits, informal exchanges, and guided discussions. Finally, performance of these systems must be compared before and after intervention based on the analysis of changes in technical efficiency, resource mobilization, and agricultural productivity.

Irrigation infrastructure development and rehabilitation in the future needs:

- Develop a map of potential areas for new irrigation system development
- Conduct dialogs among institutions on accelerated development of new irrigation system
- Change of mindset that rehabilitation, upgrade, and modernization of irrigation systems are efforts to improve provision-based irrigation management
- Perform new construction, major rehabilitation, upgrade and modernization participatory and gradually in accordance to funding ability and people need.

4.3 Cross-cutting issues

The assessment findings show that job opportunities such as casual agricultural labor – considered one of the most important income-generating activities for the rural population – have already diminished and will probably decrease even further during the upcoming harvest season. Consequently, a lack of job opportunities in areas such as farm labor will have a significant impact on the livelihoods of many vulnerable youth/women.

1) Supporting women to access assets, training and input packages

Women are socially, culturally and economically disadvantaged and yet they are responsible for ensuring the well-being of their families by securing the greater part of the family income, mostly from agricultural activities. Therefore, they are disproportionately affected by war. The Project will focus on supporting women to access assets, training and input packages. This will be done through encouraging women to: a) enhance their skills in agricultural practices, with particular reference to poultry rearing, apiculture and crop production; and b) improving their knowledge on nutrition-sensitive agriculture. The project will promote approaches deepening impact by

strengthening communication and win-win collaboration between vulnerable and more powerful actors, including action-learning exercises with different stakeholder groups (e.g. male and female farmers) at both the individual and collective levels.

2) Offer opportunities to youth

Youth are an important segment of the war affected population and will require special attention from the project. Absence of job opportunities in rural areas leads to the migration of many young people to urban centers. To offer real opportunities to young people, the Project will provide specialized technical training for livestock-based activities as well as apiculture and aquaculture. Opportunities for off-farm activities will also be offered to youth, including petty trading, provision of commercial services and post-harvest managing.

Additional findings of the assessment show that affected populations have begun to engage in distress coping mechanisms such as borrowing money and selling productive assets to access food. Levels of debt are escalating and affected populations will need to access cash as soon as possible to repay their debts. The combination of the impact of the economic downturn, high level of inflation, COVID-19 pandemic, desert locust invasion and now the ongoing war, will likely further weaken the agriculture sector, adversely impacting the most vulnerable population war affected areas. Physical damage to agricultural produce, with crops destroyed or plundered, agricultural land contaminated by explosive remnants of war, and water sources and agricultural land polluted. Conditions caused by the war can be conducive to outbreaks of pests and diseases. Efforts to address these issues include, emergency livelihood interventions such as the provision of seeds and tools, and cash for works programs, although there are concerns that providing items for free can create a ‘dependency syndrome’. Besides, resilience building is needed by investing in information and early-warning systems; addressing immediate needs in combination with longer-term interventions, including through cash transfers and support for commercialization; supporting agricultural systems and agricultural value chains; maintaining the services needed to protect against disease.

4.4 Capacity building for recovery

This subcomponent will provide the essential capacity building to ensure effective implementation productive assets recovery project components. Capacity building will be undertaken at the institutional, community and household levels. The beneficiaries and their communities need to be helped to reduce their vulnerability to disasters. This can be done in different ways, including through increased provision of knowledge and skills. The skills and capacities required at the different levels will be strengthened to ensure that communities are able to recover from disasters, and the relevant institutions are able to provide the necessary support and services to the communities and households. The target group includes the public sector (development agents (DA), technical staff), community-based organizations, and community members/farmers that will be key for the successful implementation of the project. Capacity building will be provided to equip the households with the required skills to effectively make use of the packages. Empowering measures will promote the participation of women, youth and poor smallholder farmers to encourage their participation. This will include: a) information and mobilization campaigns; b) offering a broad range of skills training activities; and c) monitoring for the inclusiveness of the youth and women. These empowering and capacity building activities will provide women, youth and poor smallholder farmer households with the necessary knowledge, skills and assets essential to recover from the disaster and improve their livelihoods.

Main activities under this sub-component will include: a) social mobilization/awareness creation; b) training in agri- entrepreneurship & financial management for youths and females; c) training of trainers and FTC facilitators; farmers training through FTCs; training for district officers; d) preparation of community-based natural resources management plans; e) community level training in disaster and risk management; f) strengthening of district disaster prevention systems through provision of agriculture development services to households; g) provision of bicycles for FTC facilitators & agriculture development agents; h) monitoring, follow-up and impact assessment.

4.5 Project coordination and management

The objective of this component is to strengthen overall coordination, monitoring and evaluation through the project implementation stakeholders. The operational costs, procurement of equipment, consumables, vehicles and the associated maintenance costs will be financed. It will provide to address specific financial needs and technical assistances to the project staff and coordinators. In turn, the project staff and coordinators will be charged with the responsibility of coordinating and monitoring implementation of project activities, including: a) financial management and reporting; b) coordination of procurement for goods and services; c) preparation and coordination of annual work plans and budgets; and d) monitoring and evaluation and project management. This will ensure that the project is implemented correctly, on time, and in accordance with the project implementation and the financing agreement.

4.6 Project locations and beneficiaries/target groups

The project area will comprise nine districts in North Shewa zone that suffered during the war period. Namely Efratana Gedim, Menze Keya Geberiel, Menz Mama, Menz Gera, Mojana Wedera, Kewet Shewa robit, and Tarmaber, Antoskiya Gemeza. The principal target group will comprise households directly affected due to the war, which work in agriculture. The public sector (technical institutions and their staff), community-based organizations, and others that will be key for the successful implementation of the project will part of the target groups in the project areas.

Direct project beneficiaries: Primary project beneficiaries will be approximately 10,000 households increasing crop and livestock production, and adopting climate-resilient practices. Assuming an average household size of six people, total beneficiaries would be about 60,000 people.

Indirect project beneficiaries: There will also be large numbers of people who will benefit indirectly from the project through: diffusion of knowledge about improved crop and livestock production; improved access to water; better quality agriculture products and more diversified food, with positive effects in terms of nutrition and food security. In addition, all those living in

the project areas will benefit from strengthened local economies resulting from inflows of income and strengthened local demand. Thus, project activities will indirectly stimulate the whole rural economy benefiting rural population (including the rural poor) and possibly reducing rural-urban migration.

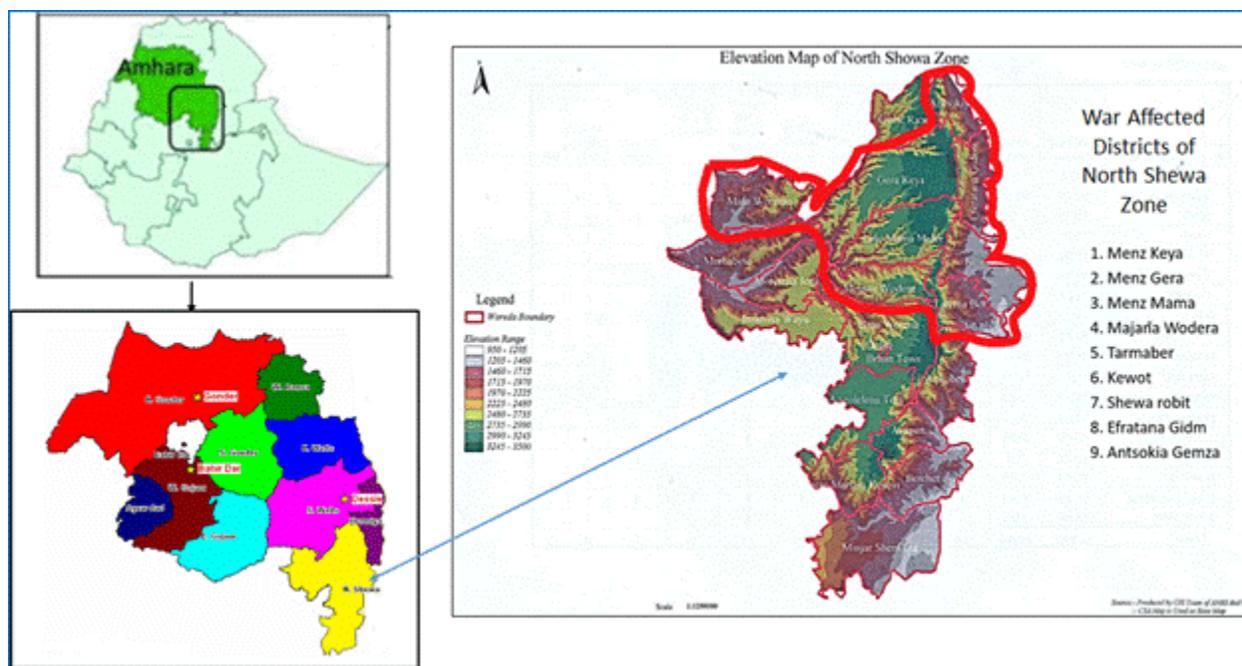


Figure 5: Location map of project areas

4.7 Expected outputs and Outcomes

4.7.1 Expected output

- War-affected livestock holders supported by restocking and livestock packages (sheep, goats, poultry, fattening, etc.).
- Animal production improved through provision of supplementary livestock feeds and improved healthcare.
- Capacity of project beneficiaries (including rural youth and women, as well as extensions staff) built and improved.
- Small-scale farmers enabled to resume crop production activities, and technical improvement of the production systems

- Water and fertilizer use efficiency improved through rational use of water using localized/adapted drip irrigation systems
- Capacity of farmers and stakeholders built on the needs and means to rehabilitate the crop sub-sector
- Irrigation designs improved for higher yields

4.7.2 Expected Outcomes

- Private and public assets restored
- Farmers livelihood improved
- Crop productivity improved
- Animal health and productivity improved

4.8 Project budgets and cost estimates

The project is expected to be financed from different sources such as the governmental and non-governmental organizations, other fund sources and the beneficiaries.

Table 6: Budget summary by project components and funding sources (Birr)

S.N	Project components	NGO & others	Government	Beneficiaries	Total
1	Crop production and natural resources recovery	678,091,704	127,142,195	42,380,732	847,614,630
2	Livestock production recovery	1,326,400,000	248,700,000	82,900,000	1,658,000,000
3	Restoration of infrastructures, asset, and other facilities	693,200,000	129,975,000	43,325,000	866,500,000
4	Capacity building for recovery	14,880,113	19,834,463	3,857,175	38,571,750
5	Project coordination and management	492,619,672	91,720,842	30,489,667	614,830,181
	Total	3,205,191,489	617,372,499	202,952,573	4,025,516,561
	Physical Contingencies	64,103,830	12,347,450	4,059,051	80,510,331
	Price Contingencies	64,103,830	12,347,450	4,059,051	80,510,331
	Grand Total	3,333,399,149	642,067,399	211,070,676	4,186,537,224

Table 7: Annual budget summary by project components (Birr)

S.N	Project components	Year 1	Year 2	Year 3	Total
1	Crop production and natural resources recovery	169,522,926	423,807,315	254,284,389	847,614,630
2	Livestock production recovery	331,600,000	829,000,000	497,400,000	1,658,000,000
3	Restoration of infrastructures, asset, and other facilities	173,300,000	433,250,000	259,950,000	866,500,000
4	Capacity building for recovery	14,880,113	19,834,463	3,857,175	38,571,750
5	Project coordination and management	123,152,804	307,539,021	178,094,137	614,830,181
	Total	812,455,843	2,013,430,799	1,193,585,701	4,025,516,561
	Physical Contingencies	16,249,117	40,268,616	23,871,714	80,510,331
	Price Contingencies	16,249,117	40,268,616	23,871,714	80,510,331
	Grand Total	844,954,077	2,093,968,031	1,241,329,129	4,186,537,224

5. Implementation arrangements

5.1 Institutions/stakeholders/partners

Following organizations/institutions and others interested are expected to collaborate in the implementation processes.

- ✓ Districts where the project will be operational
- ✓ National, regional, zonal and district agricultural offices
- ✓ Local and international development partners
- ✓ Research institutions
- ✓ Debre Berhan University

5.2 Monitoring and evaluation

Debre Berhan University in collaboration with other stakeholders will maintain a robust monitoring and evaluation system for the implementation of this project. The success of the project

implementation depends significantly, on how effectively the planned activities and outputs are monitored and evaluated. DBU will put in place a monitoring and evaluation system continuously from planning to implementation and reporting. Monitoring, evaluation and reporting are the main tasks of the project implementation process.

Evaluation should be conducted:

- To determine whether the implementation of the project is effective
- To identify gaps and challenges during the implementation of the project, as well as to take further corrective measures
- To verify the accuracy/validity of the assumptions made when the project was prepared
- To continually improve the resource allocation and utilization of the project
- To encourage various implementers/executive bodies based on their performance
- To provide information to various stakeholders on the implementation of the project and its outcomes

Accordingly, in order to strengthen the monitoring and evaluation process, it has to be carried out in the following approaches:

- Periodic monitoring and evaluation report and feedback
- Conducting in-depth research to identifying gaps and take action
- Discussions with all stakeholders and joint evaluations
- Expenditure and performance evaluation (cost-performance effectiveness evaluation)
- Comparative assessment of input and output
- Supervision
- Annual review of the performance of the main goals supported by the survey.

All stakeholders will also carry out monitoring and evaluation on a weekly, 15-day, monthly, quarterly and annual basis at all levels. In this process, the implementation trends and achievement levels of project goals are monitored and evaluated regularly through field visits, partners' progress reports using developed formats.

5.3 Risks and mitigations

The main issues and risks are weak institutional capacity for implementation, especially in the areas of procurement, financial management, agricultural extension services, veterinary services and social mobilization and community development and climate variability. The Project will strengthen institutional capacity and skills through training as well as support from NGOs and consultants (national and international) who will work closely with the beneficiaries and government institutions. The critical operational risks, their impact and probability and the proposed mitigation measures are presented in the table below.

Agriculture Recovery Project (ARP)

Table 8: Risk Identification and Mitigation

Risk	Impact and Probability	Mitigation Measures
<p>Limited Public Sector Capacity at Local Levels – The district level will have important roles in planning, coordination and supervising project implementation. The municipalities and communes in particular, have limited capacity in terms of staff numbers, skills, experience and facilities and supervision.</p>	<p>Less than effective Project implementation, coordination</p>	<p>The Project will provide capacity building for selected district and municipality staff who will remain in place after the project is completed to continue to deliver services</p>
<p>Limited Capacity at Community Level – Few service providers with required knowledge and skills for social mobilization, community development and income generation.</p>	<p>Less than effective Project implementation. Social mobilization and community development are vital to ensure smooth implementation and lay the foundation for sustainability. High probability of occurring.</p>	<p>Provision of technical assistance and local level community support. The project will be responsible for identifying, selecting and training community level staff.</p>
<p>Protracted Procurement Process – The procurement process takes more time than expected</p>	<p>Late delivery of good quality agro inputs leads to missing of the agricultural season. Medium probability of occurring.</p>	<p>Procurement planning, including strict adherence to the timing of the processes as per the procurement plan</p>
<p>Poor Coordination with Other Projects – Failure to establish appropriate liaison with</p>	<p>Inadequate coordination may lead to duplication of efforts and</p>	<p>Project management will work very closely with local governments to ensure effective</p>

Agriculture Recovery Project (ARP)

other post- emergency projects in the ARP areas of focus.	inefficient use of scarce resources. Low probability of occurring.	targeting (with regard to areas of focus and beneficiaries).
Negative Impact on the Environment – Implementation of some activities may lead to undesirable consequences on the environment.	Some Project activities alter the physicochemical structure of the area; this could destabilize the ecological balance. Low probability of occurring.	The project will analyze and minimize negative impacts through an environmental management plan. Training will be provided and site management plans for infrastructure.
Creation of Dependency Syndrome – The transition between emergency, recovery and longer-term development interventions needs to be managed with care; badly managed, this could create a dependency syndrome.	The dependency syndrome could make the target group less willing to participate in recovery activities, especially considering that emergency humanitarian assistance has been going on for some years. Low probability of occurring on any significant scale.	A good M&E system will identify households struggling with the transition; these will be supported by the proven individual household mentoring approach to assist them in overcoming the dependency syndrome.
Climate related shocks – The climate variability will be to pronounced	Agricultural productivity is adversely affected and efforts in livelihoods recovery continue to be undermined. Medium probability of occurring.	The concept on building back better including diversification of livelihoods will stabilize or enhance productivity. Capacity building of the smallholders in climate change adaptation through the FTCs will also reduce vulnerability to climate shocks.

5.4 Sustainability

Participation of stakeholders in the processes of project design, planning, implementation and monitoring will help to safeguard sustainability of the project. Moreover, continued improvement of the knowledge and skills of farmers on various interventions and techniques will guarantee successful project achievements which eventually help to ensure sustainability of the project. Being a recovery project, the emphasis will be on enabling the beneficiaries and their communities to transition from the emergency to recovery phases and subsequently into the development phase. Consequently, efforts will be made to ensure that, by the end of the project, beneficiaries and their communities have been facilitated to return to a situation, at least as good as before the war but preferably an improved situation; based on the principle of and “build back better”. In addition to “building back better” stakeholders will be provided with the ability to continue with the initiated interventions when the project ends. Capacity building will be undertaken at the institutional, community and household levels. The skills and capacities required at the different levels will be strengthened to ensure communities are able to recover from disasters and the relevant institutions are able to provide the necessary support and services.

Agriculture Recovery Project (ARP)

6. Appendices

Appendix Table 1: Project cost estimates and expected budget sources for crop production and natural resources recovery (Birr)

S.N	Activities/Interventions	Project years			Total	Source of finance		
		Year 1	Year 2	Year 3		NGO & others	Government	Beneficiaries
	Crop production and natural resources recovery							
1	Introduce improved crop production technologies and farm diversification options	42,000,000	105,000,000	63,000,000	210,000,000	168,000,000	31,500,000	10,500,000
1.1	Improving access to quality agricultural inputs (seeds, fertilizer, chemicals, etc.)	29,400,000	73,500,000	44,100,000	147,000,000	117,600,000	22,050,000	7,350,000
1.2	Produce different rain fed crops	12,600,000	31,500,000	18,900,000	63,000,000	50,400,000	9,450,000	3,150,000
2	Recovery of horticultural crops	35,722,926	89,307,315	53,584,389	178,614,630	142,891,704	26,792,195	8,930,732
2.1	Home and school gardening/interventions	9,336,262	23,340,654	14,004,392	46,681,308	37,345,046	7,002,196	2,334,065
2.2	Introduction of improved horticulture varieties to the affected families	8,025,914	20,064,785	12,038,871	40,129,570	32,103,656	6,019,436	2,006,479
2.3	Expansion of horticultural land base and increased productivity	11,604,861	29,012,153	17,407,292	58,024,306	46,419,445	8,703,646	2,901,215
2.4	Develop promising value chains	6,755,889	16,889,723	10,133,834	33,779,446	27,023,557	5,066,917	1,688,972
3	Recovery of permanent plantations	34,000,000	85,000,000	51,000,000	170,000,000	136,000,000	25,500,000	8,500,000
3.1	Nursery establishment	12,049,578	30,123,944	18,074,366	60,247,888	48,198,311	9,037,183	3,012,394
3.2	Nursery equipment and tools	7,591,234	18,978,085	11,386,851	37,956,170	30,364,936	5,693,425	1,897,808
3.3	Seedling production	8,675,696	21,689,240	13,013,544	43,378,479	34,702,784	6,506,772	2,168,924
3.4	Pitting	3,253,386	8,133,465	4,880,079	16,266,930	13,013,544	2,440,039	813,346
3.5	Seedling planting	2,168,924	5,422,310	3,253,386	10,844,620	8,675,696	1,626,693	542,231

Agriculture Recovery Project (ARP)

3.6	Compost preparation	261,183	652,957	391,774	1,305,913	1,044,731	195,887	65,296
4	Improve water availability for irrigation and promote efficient water use	33,800,000	84,500,000	50,700,000	169,000,000	135,200,000	25,350,000	8,450,000
4.1	Irrigation equipment's and tools (pumps, hose, watering cans etc.)	18,571,296	46,428,240	27,856,944	92,856,480	74,285,184	13,928,472	4,642,824
4.2	Produce different crops using irrigation	4,826,848	12,067,119	7,240,271	24,134,238	19,307,390	3,620,136	1,206,712
4.3	Rejuvenation of natural springs	4,126,955	10,317,387	6,190,432	20,634,773	16,507,819	3,095,216	1,031,739
4.4	Roof top rain water harvesting	3,861,478	9,653,695	5,792,217	19,307,390	15,445,912	2,896,109	965,370
4.5	Promote efficient water use practices and technologies	2,413,424	6,033,559	3,620,136	12,067,119	9,653,695	1,810,068	603,356
5	Community based sustainable natural resources management	24,000,000	60,000,000	36,000,000	120,000,000	96,000,000	18,000,000	6,000,000
5.1	Forests and rangelands	12,000,000	30,000,000	18,000,000	60,000,000	48,000,000	9,000,000	3,000,000
5.2	Protected areas	12,000,000	30,000,000	18,000,000	60,000,000	48,000,000	9,000,000	3,000,000
5.3	Crop production and natural resources recovery total	169,522,926	423,807,315	254,284,389	847,614,630	678,091,704	127,142,195	42,380,732
	Physical contingencies	3,390,459	8,476,146	5,085,688	16,952,293	13,561,834	2,542,844	847,615
	Price contingencies	3,390,459	8,476,146	5,085,688	16,952,293	13,561,834	2,542,844	847,615
	Total	176,303,843	440,759,608	264,455,765	881,519,215	705,215,372	132,227,882	44,075,961

Agriculture Recovery Project (ARP)

Appendix Table 2: Project cost estimates and expected budget sources for livestock production recovery (Birr)

S.N	Activities/Interventions	Project Years			Total	Source of finance		
		Year 1	Year 2	Year 3		NGO & others	Government	Beneficiaries
1	Feed development interventions	17,069,707	42,674,267	25,604,560	85,348,533	68,278,826	12,802,280	4,267,427
1.1	Emergency feed supplementation (minerals, urea, molasses, concentrates, etc.)	5,883,401	14,708,502	8,825,101	29,417,004	23,533,603	4,412,551	1,470,850
1.2	Input supplies to produce annual and perennial forage planting materials (seeds seedlings, fertilizers)	7,942,591	19,856,477	11,913,886	39,712,955	31,770,364	5,956,943	1,985,648
1.3	Consultation and training	1,282,581	3,206,453	1,923,872	6,412,907	5,130,325	961,936	320,645
1.4	Technical supervision and follow up	320,057	800,142	480,085	1,600,285	1,280,228	240,043	80,014
2	Animal health interventions	24,816,184	62,040,461	37,224,276	124,080,921	99,264,737	18,612,138	6,204,046
2.1	Surveillance on disease outbreaks and livestock body condition	320,057	800,142	480,085	1,600,285	1,280,228	240,043	80,014
2.2	Livestock health care (vaccination and deworming)	3,922,267	9,805,668	5,883,401	19,611,336	15,689,069	2,941,700	980,567
2.3	Consultation and training	962,524	2,406,311	1,443,787	4,812,622	3,850,097	721,893	240,631
2.4	Provide veterinary supplies	19,611,336	49,028,339	29,417,004	98,056,679	78,445,343	14,708,502	4,902,834
3	Livestock genetic improvement	23,625,937	59,064,842	35,438,905	118,129,685	94,503,748	17,719,453	5,906,484
3.1	Restoration of Amed Guya Sheep Breeding and Multiplication Center	12,792,910	31,982,274	19,189,365	63,964,548	51,171,639	9,594,682	3,198,227
3.2	On farm breeding interventions for breed improvement	980,567	2,451,417	1,470,850	4,902,834	3,922,267	735,425	245,142
3.3	Consultation and training	46,793	116,982	70,189	233,963	187,171	35,094	11,698
3.4	Modernization of the station breeding (ASBMC)- assisted reproductive technologies and supplies, expansion: road, water, residence	9,805,668	24,514,170	14,708,502	49,028,339	39,222,671	7,354,251	2,451,417
4	Training and education	27,455,870	68,639,675	41,183,805	137,279,350	109,823,480	20,591,903	6,863,968
4.1	Sponsoring scholarships	19,611,336	49,028,339	29,417,004	98,056,679	78,445,343	14,708,502	4,902,834

Agriculture Recovery Project (ARP)

4.2	Short term in-service training	7,844,534	19,611,336	11,766,801	39,222,671	31,378,137	5,883,401	1,961,134
5	Financial services	21,259,472	53,148,681	31,889,209	106,297,362	85,037,890	15,944,604	5,314,868
5.1	Credit institution-revolving fund	19,611,336	49,028,339	29,417,004	98,056,679	78,445,343	14,708,502	4,902,834
5.2	Organization-cooperatives	392,227	980,567	588,340	1,961,134	1,568,907	294,170	98,057
5.3	Consultation and training	935,853	2,339,632	1,403,779	4,679,265	3,743,412	701,890	233,963
5.4	Technical supervision and follow up	320,057	800,142	480,085	1,600,285	1,280,228	240,043	80,014
6	Restocking (Livestock packages)	217,372,830	543,432,074	326,059,245	1,086,864,149	869,491,319	163,029,622	54,343,207
6.1	Need assessment - selection of livestock species, sourcing - time/period to stock							
6.2	Sheep and goats	156,890,686	392,226,715	235,336,029	784,453,429	627,562,744	117,668,014	39,222,671
6.3	Poultry	58,834,007	147,085,018	88,251,011	294,170,036	235,336,029	44,125,505	14,708,502
6.4	Housing, feeding & veterinary care	392,227	980,567	588,340	1,961,134	1,568,907	294,170	98,057
6.5	Consultation and training	935,853	2,339,632	1,403,779	4,679,265	3,743,412	701,890	233,963
6.7	Technical supervision and follow up	320,057	800,142	480,085	1,600,285	1,280,228	240,043	80,014
6.8	Livestock production recovery total	331,600,000	829,000,000	497,400,000	1,658,000,000	1,326,400,000	248,700,000	82,900,000
	Physical contingencies	6,632,000	16,580,000	9,948,000	33,160,000	26,528,000	4,974,000	1,658,000
	Price contingencies	6,632,000	16,580,000	9,948,000	33,160,000	26,528,000	4,974,000	1,658,000
	Total	344,864,000	862,160,000	517,296,000	1,724,320,000	1,379,456,000	258,648,000	86,216,000

Agriculture Recovery Project (ARP)

Appendix Table 3: Project cost estimates and expected budget sources for restoration of infrastructures, asset and other facilities (Birr)

S.N	Activities/Interventions	Project years			Total	Source of finance		
		Year 1	Year 2	Year 3		NGO & others	Government	Beneficiaries
1	Restoration of infrastructures, asset, and other facilities							
1.1	Private houses with apparels and home appliances	63,000,000	157,500,000	94,500,000	315,000,000	252,000,000	47,250,000	15,750,000
1.2	Public buildings with offices equipment's and supplies	22,500,000	56,250,000	33,750,000	112,500,000	90,000,000	16,875,000	5,625,000
1.3	Animal health centers with equipment's and medicines	23,800,000	59,500,000	35,700,000	119,000,000	95,200,000	17,850,000	5,950,000
1.4	Farmers training centers with equipment's and facilities	24,000,000	60,000,000	36,000,000	120,000,000	96,000,000	18,000,000	6,000,000
1.5	Irrigation facilities with the necessary machineries and equipment	40,000,000	100,000,000	60,000,000	200,000,000	160,000,000	30,000,000	10,000,000
	Restoration of infrastructures, asset, and other facilities total	173,300,000	433,250,000	259,950,000	866,500,000	693,200,000	129,975,000	43,325,000
	Physical contingencies	3,466,000	8,665,000	5,199,000	17,330,000	13,864,000	2,599,500	866,500
	Price contingencies	3,466,000	8,665,000	5,199,000	17,330,000	13,864,000	2,599,500	866,500
	Total	180,232,000	450,580,000	270,348,000	901,160,000	720,928,000	135,174,000	45,058,000

Agriculture Recovery Project (ARP)

Appendix Table 4: Project cost estimates and expected budget sources for capacity building for recovery (Birr)

S.N	Activities	Project years			Total	Source of finance		
		year 1	year 2	year 3		NGO & others	Government	Beneficiaries
1	Social mobilization/awareness creation	2,990,000	1,150,000	460,000	4,600,000	3,680,000	690,000	230,000
2	Training on agri-entrepreneurship & financial management for youths and females	752,500	1,182,500	215,000	2,150,000	1,720,000	322,500	107,500
3	Disaster and risk management resilience building training	980,000	1,540,000	280,000	2,800,000	2,240,000	420,000	140,000
4	Training in community based natural resource management planning	595,000	935,000	170,000	1,700,000	1,360,000	255,000	85,000
5	Training of master trainers	1,155,000	1,815,000	330,000	3,300,000	2,640,000	495,000	165,000
6	Training of FTC facilitators	1,039,500	1,633,500	297,000	2,970,000	2,376,000	445,500	148,500
7	Agriculture development services to households	1,743,000	2,739,000	498,000	4,980,000	3,984,000	747,000	249,000
8	Farmers training through FTCs	540,750	849,750	154,500	1,545,000	1,236,000	231,750	77,250
9	Training for district officers	1,015,000	1,595,000	290,000	2,900,000	2,320,000	435,000	145,000
10	Bicycles for FTC facilitators	1,225,000	1,925,000	350,000	3,500,000	2,800,000	525,000	175,000
11	Bicycles for agriculture development agents	1,706,250	2,681,250	487,500	4,875,000	3,900,000	731,250	243,750
12	Monitoring and follow up	301,000	473,000	86,000	860,000	688,000	129,000	43,000
13	Impact assessment	194,250	305,250	55,500	555,000	444,000	83,250	27,750
	Contingency (5%)	642,863	1,010,213	183,675	1,836,750	1,469,400	275,513	91,838
	Total	14,880,113	19,834,463	3,857,175	38,571,750	30,857,400	5,785,763	1,928,588

Agriculture Recovery Project (ARP)

Appendix Table 5: Project cost estimates and expected budget sources for project coordination and management (Birr)

S.N	Activities	Project years			Total	Source of finance		
		year 1	year 2	year 3		NGO & others	Government	Beneficiaries
1	Project coordination and management	123,908,331	307,035,336	177,842,295	614,830,181	488,590,192	90,965,314	30,237,824
2	Workshops	819,000	315,000	126,000	1,260,000	1,008,000	189,000	63,000
3	Baseline/preparatory studies	422,500	162,500	65,000	650,000	520,000	97,500	32,500
4	Mid Term review and impact assessment	617,500	237,500	95,000	950,000	760,000	142,500	47,500
5	Project completion and impact evaluation	715,000	275,000	110,000	1,100,000	880,000	165,000	55,000
6	Audits	292,500	112,500	45,000	450,000	360,000	67,500	22,500
7	M&E studies	251,550	96,750	38,700	387,000	309,600	58,050	19,350
	Total	127,182,284	308,294,549	178,345,980	619,867,031	492,619,672	91,720,842	30,489,667