

# Global Study on CBM and Empowerment: ETHIOPIA



EJERE



CHEFE DONSA

## CBM STUDY TEAM

ISRAEL OLIVER KING (INDIA)  
BHARAT BHANDARI (NEPAL)  
SERGIO GUILHERME DE AZEVEDO  
(BRAZIL)  
KUMAR NATARAJAN (INDIA)



HARBU

October 2010  
Addis Ababa, Ethiopia

Wageningen University and Research Centre/Centre for Development Innovation  
P.O. Box 88, 6700 AA, Wageningen, the Netherlands;

In collaboration with:

Ethio-Organic Seed Action, Addis Ababa, Ethiopia

Wageningen University and Research Centre /Centre for Development Innovation ©

The current document is the result of the Exchange Programme within the Global Study on Community Biodiversity Management and Empowerment, coordinated by Wageningen University and Research Centre/Centre for Development Innovation, in cooperation with Ethio-Organic Seed Action (Ethiopia); MS Swaminathan Research Foundation (India); Local Initiatives for Biodiversity, Research and Development (Nepal); the Federal University of Santa Catarina (Brazil); the Brazilian Agricultural Research Corporation, Embrapa (Brazil); and Bioversity International. The study is financed through Wageningen University and Research Centre – Directorate General for International Cooperation Partnership Programme.

Editorial support: Walter Simon de Boef and Genene Gezu

Copy-editing: Elizabeth O’Keeffe

Citation:

Israel Oliver King, Bharat Bhandari, Sergio Guilherme de Azevedo and Kumar Natarajan, with Genene Gezu, Samson Gashu and Temesgen Desalegn, 2010. Global Study on CBM and Empowerment - Ethiopia Exchange Report. Wageningen, Wageningen University and Research Centre/Centre for Development Innovation.

## Contents

Acknowledgements .....	3
1. Introduction .....	4
2. Methodology and processes.....	5
3. Site Characterization .....	6
3.1 Ejere site .....	6
3.1.1 Introduction.....	6
3.1.2 CBM approaches and a processes .....	7
3.1.3 CBM practices.....	7
3.2 Chefe Donsa site.....	9
3.2.1 Introduction.....	9
3.2.2 CBM approaches and processes.....	10
3.2.3 CBM practices.....	11
3.3. Harbu site .....	12
3.3.1 Introduction.....	12
3.3.2 CBM approaches and processes.....	14
3.3.3 CBM practices.....	14
4. Diversity of sites: impact on empowerment .....	15
5. Historic drivers for empowerment.....	17
6. Cultural drivers for empowerment.....	20
7. Drivers for CBM.....	22
8. Definition for empowerment.....	23
9. Community within the term CBM: is this collective management?.....	24
10. Inclusion / equality and gender .....	25
11. Competing claims: land ownership, CBM and empowerment, marketing and varieties .....	27
12. Governance and CBM.....	29
13. Sustainability of CBM.....	31
14. CBM and genetic resource policies in Ethiopia .....	32
15. CBM and farmers' rights.....	34
16. Relation between customary rights and custodianship.....	36
17. CBM and access and benefit-sharing over genetic resources.....	37
18. CBM, empowerment and <i>in situ</i> conservation.....	38
19. General synthesis.....	39
ANNEXES .....	40
Annex 1: Integrated Agro-Biodiversity Management and Seed Security Programme ....	40
Annex 2: Activities and plan for the study.....	41
Annex 3: Roles and responsibilities of CBM study team in Ethiopia.....	42

## Acknowledgements

The CBM expert team in Ethiopia expresses their deep sense of gratitude to:

The EOSA team members, Mr. Genene Gezu, Mr. Temesgen Desalegn, and Mr. Samson Gashu, for their support in organizing the focus group discussions and sharing their experience in the field; and Ms. Bekelech and Mr. Ermias for their assistance during the field work.

Dr. Walter Boef, Dr. Regassa Feyissa, Dr. Melaku Worede, Mr. Hailu Getu, Dr. Awegechew Teshome and Dr. Bayush Tsegaye, for sharing their expertise, guidance and insights on CBM and Empowerment.

Farmers and extension officials from the Ejere, Chefe Donsa and Harbu sites, for sharing their invaluable experiences and their time.

Israel Oliver King (India)

Bharat Bhandari (Nepal)

Sergio Guilherme De Azevedo (Brazil)

Kumar Natarajan (India)

Addis Ababa, 11 October 2010

## 1. Introduction

The Global Community Biodiversity Management (CBM) study project began in 2009, with the objective of analyzing the contribution of CBM, and the experiences of community management of agrobiodiversity in four countries that play a key role in the global plant genetic resources debate: Ethiopia, India, Brazil and Nepal. The research and rural development organizations involved in the study are Ethio-Organic Seed Action, in Ethiopia; M.S. Swaminathan Research Foundation, and Bioversity International, in India; Local Initiatives for Biodiversity, Research and Development, in Nepal; and Embrapa, and the Federal University of Santa Catarina, in Brazil.

Ethio-Organic Seed Action (EOSA), and Wageningen University and Research Centre/Centre for Development Innovation (Wageningen UR/CDI), the Netherlands, organized the exchange visit in Ethiopia, from 23rd of September to 12th of October, 2010.

Ethio-Organic Seed Action (EOSA) is the host organization that convened the exchange visit in Ethiopia. EOSA is a non-profit, non-governmental organization (NGO), which was established in 2003, and which promotes integrated agrobiodiversity management and seed security programmes in Woreilu and Kalu woredas, of the South Wollo zone; Lume and Gimbichu woredas, in the East Showa zone; Dendi woreda in the West Shewa zone; Hitosa woreda in the Arsi zone; Dolo Mena woreda in the Bale zone; and Hawassa Zuria woreda in the Sidama zone. EOSA is an accredited Slow Food award-winning organization and has been funded by local and international partners for community based agrobiodiversity management. EOSA provides technical, material, and financial support; coordinates all on-farm and off-farm agrobiodiversity development activities; and facilitates capacity-building, strengthening farmers' institutions and linking community groups and organizations with different local, regional and international stakeholders. A detailed note on EOSA's Integrated Agro-Biodiversity Management and Seed Security Programme is provided in Annex 1.

During this exchange visit, the exchange team, Oliver and Kumar (MSSRF, India), Bharat (LI-BIRD, Nepal) and Sergio (Embrapa, Brazil) visited the Ejere, Chefe Donsa and Harbu sites, to see the CBM activities of the communities that are facilitated by EOSA. The team had the opportunity to learn and share knowledge related to CBM from the representative sites. This exchange visit helped to understand and document the drivers of empowerment in the context of CBM, and assess the impacts of the *in situ* conservation programme in Ethiopia. Finally, the lessons learned by stakeholders at the project sites, and the views of experts, were used to develop this draft report.

## 2. Methodology and processes

- Review of the terms of reference (ToRs) of the CBM study.
- Formation of working groups to share the roles and responsibilities, based on the expertise of the team members.
- Orientation on the CBM study (provided by the Coach), including general recommendations on how to conduct the CBM exchange visit, dos and don'ts of the exchange programme, carried out by Dr. Walter de Boef.
- Discussions with the Director of the Hosting Organization (EOSA) and the official coordinator of the exchange programme regarding the organizational policies, roles and responsibilities of the host organizations in facilitating CBM, and on the position of the organization regarding the PGR and ABS regimes.
- Review of literature currently available on the CBM sites, with the host organization, including maps, secondary data, economic analyses, published papers, national policy reviews and other means of verification.
- Site briefings by scholars from the host organization, including site history, drivers of change, project implementation, and the socio-economic, and political scenarios of the sites.
- Field visits to respective sites, including transect walks, the physical verification of records, photography and general observations.
- Focus group discussions with the stakeholders in respective sites, including CBOs, farmers' organizations, women's representatives, agricultural and rural development offices and cooperatives.
- Post field visit discussions within the team, including clarification of doubts, triangulation and verification of information.
- Drafting of the chapters, analysis, review and interpretations as per the ToRs.

## 3. Site Characterization

### 3.1 Ejere site

#### 3.1.1 Introduction

The EOSA project site of Ejere is located about 40 km away from the city of Adama, in the central highlands of the Oromia region of Lume district. It represents a hilly landscape in the great East African Rift Valley. Around 400 households from the surrounding kebeles of Lume district make up the site, with scattered settlement patterns. The area is characterized by a mixed, crop-livestock farming system. The soil is predominantly of a clay-loam and vertisol type. The altitude of the area is about 2400 masl and has an annual rainfall of approximately 900 mm, most of which falls during the summer season. The inhabitants of Ejere are traditional farmers and the site represents a good production environment, despite being located in a semi-arid region. Rain-fed subsistence agriculture is the mainstay of the livelihoods of the community, and is based on the rearing of livestock (cattle, sheep, and donkey) and the cultivation of wheat and legumes such as chick pea, lentil, and fenugreek and grass pea. The farmers use mainly draught animals to power the plough and manual labour for sowing and harvesting. They also hire farm labourers from other regions with different harvesting seasons, especially from the northern part of the country. “*Debo*” (exchange labour practice) is also a common and traditional activity. Ejere farmers have until now been concentrating on small-scale production, using traditional production methods. However, it seems they will soon be moving towards semi-commercial agricultural systems. The Oromo and Amhara ethnic groups are the main ethnic groups in this area, and Oromifa and Amharic are the main languages spoken.

The Ejere community has access to its nearest markets in Mojo town and Addis Ababa, the national capital, which has a high population, transformation industries and is well served by good roads. The area has the potential for high quality seed production of adapted crops due to its favourable climate, productive soil and the market access. The Ejere area was considered to be a biodiversity hotspot due to the presence of tetraploid wheat. This is evident from the durum wheat collections maintained and used in the community seed bank complex at Ejere.

To meet the increasing demand for food in the communities, changing socio-economic conditions and national agricultural policies, diversity-based cultivars were replaced by uniform semi-dwarf wheat varieties to increase the production and productivity of major crops that had threatened crop genetic diversity of this region. Land fragmentation, the introduction of new varieties, the shortage of external inputs as well as changes in climatic conditions in rain-fed agricultural systems, were the key production constraints encountered by the farmers. Efforts have been made by the Institute of Biodiversity Conservation (IBC) and by EOSA, with the full participation of the communities, to restore the traditional crops and the overall cropping pattern, through the reintroduction of lost wheat crop diversity.

The Ejere CBM site focuses mainly on the reintroduction, and on-farm management, of traditional wheat varieties and some legumes, through crop rotation practices. Farmers are involved in on-farm conservation by means of a seed bank and seed production activities to fulfil their local seed security needs, and ultimately to support their household food security. The CBM activities facilitated by EOSA are of particular importance because the traditional crops and varieties are neglected by the formal research, extension and seed supply programme. Moreover, EOSA has been addressing the



research and development agenda of farmers, since the formal system focuses on introduced germplasm that perform well under high input situations, but which are frequently vulnerable to biotic and abiotic stresses that have direct negative impacts on the livelihoods of the community.

### **3.1.2 CBM approaches and a processes**

During discussions with the communities and various stakeholders, including the staff of EOSA, farmers' associations, women's representatives of the communities, and extension services from the area, the CBM team understood that the following steps had been taken as a part of the CBM processes:

- Awareness-raising programmes on issues related to plant genetic resources (PGRs) management and environmental degradation, focusing on the importance of local PGR in the region with particular emphasis on durum wheat varieties.
- Inventory, collection, documentation, cataloguing genetic resources and understanding the status of crop diversity, using baseline surveys and tracing back germplasm with the national genebank.
- Documentation of traditional knowledge and practices of the elder farmers associated to those traditional crops and varieties.
- Restoration of the cropping pattern using the older collections from the locality maintained in the national genebank; and putting into practice the reintroduction of traditional wheat varieties through participatory varietal selection (PVS), seed production and linkage with community seed banks, seed processing, seed fairs, and food-tasting panels.
- Establishment and empowerment of farmers' institutions through the community seed bank approach, and initiation of institutional linkages.
- Continuous handholding or technical backstopping to ensure sustainability of the practices and approaches.
- Scaling-up of good practices of CBM within and outside the target community.

### **3.1.3 CBM practices**

#### ***Community awareness:***

A village-based 'community seed bank' complex was initiated to raise awareness on the need for integrated agrobiodiversity management, and to motivate the community to manage and conserve biodiversity at household and community levels for food and livelihood security. This initiative was designed as an early warning system for issues related to PGR.

#### ***On-farm seed multiplication:***

In Ejere, seed multiplication includes both of the enhanced varieties of durum wheat landraces and basic seeds of improved varieties obtained from national agricultural research centres and the Ethiopian Seed Enterprise (ESE), through extension services.

#### ***Soil fertility management practices:***

EOSA's activities focus on revitalizing the declining crop rotation practices by encouraging the cultivation of pulses and promoting compost use and proper agronomic practices that conserve the resource base through improving soil fertility.

#### ***Reintroduction, on-farm conservation and enhancement of farmers' varieties:***

EOSA, together with the local farmers, is attempting to restore the cropping pattern and the displaced genetic diversity of durum wheat in the area, for which Ethiopia is a centre of diversity. This restoration, and the broadening of the options for locally adapted planting materials, is essential to ensure seed security of the farm households and also to cope with the growing challenges of climate



change. Enhancement of the local materials is carried out in a participatory process where experts from research and academic institutions, as well as agricultural development workers, worked together with the local farmers. This participatory process provided opportunities to exchange and utilize formal and informal knowledge systems.

#### ***Crop and livelihood diversification:***

Diversification is the key to ensuring food and livelihood security. EOSA promotes the diversification of planting materials to break the cycle of mono cropping, diversify dietary sources, enrich soil fertility, generate income and ensure harvest security. Livelihood diversification activities include vegetable production, the production and marketing of improved energy-saving stoves by women's groups, and so on.

#### ***Community seed bank (CSB):***

EOSA is providing technical support to the community seed bank (CSB) in East Shewa (Ejere) to ensure seed security. The community seed bank acts as a bridge between the formal genebank and the individual seed stores at household level. The seed bank has short and medium-term storage facility. The CSB facility provides space for germplasm preservation, as well as seed and grain storage, at community level. This structure maintains a sustainable distribution of quality seed adapted to the locality (revolving seed system) and developed from enhanced local varieties. It links the on-farm management of biodiversity with the formal conservation of genetic diversity *ex situ*. This community-level farmer-managed facility also serves as a centre for community empowerment. So far more than 90 varieties of wheat are conserved in the CSB, and are frequently checked for their adaptation and viability under on-farm conditions. Out of this huge diversity, farmers selected five varieties in a participatory way, based on their better adaptation traits, higher production potential and quality traits for seed and food production. If they have enough seed, they distribute some varieties formally and informally beyond their members, in the locality. A number of important legumes such as chick pea, grass pea, and fenugreek are also conserved and multiplied by members of the CSB, as a source of cash and for use in crop rotation, for maintaining the soil fertility status.

#### ***Participatory variety selection (PVS):***

PVS of enhanced forms of landraces ensures the sustainable management and use of biodiversity. The main objective of this practice is to select better performing or more desirable varieties or accessions from heterogeneous populations. The aim is that the selected variety will contribute towards community seed security, which will imply immediate utilization of PGR. The reintroduction and participatory selection of these traditional wheat varieties under on-farm conditions, with the full participation of farmers, contributes to *in situ* conservation and hence the sustainable utilization of plant genetic resources.

#### ***Market linkages, seed fair and food tasting panel:***

As an incentive for farmers and to ensure the sustainability of the approach, part of the durum wheat produce was sold to a food-processing factory. However, based on an assessment of qualitative traits, the volume is not big enough to create links with industries that produce pasta. A seed cleaner is being introduced as a way of scaling-up and strengthening the capacity of the community seed bank to add value to, and enhance the utility of, traditional wheat varieties. EOSA facilitated a seed fair and a food-tasting panel, involving the display of a large diversity of crops and varieties with the associated local food options.

#### *Ejere area farmers' conservator and seed producer cooperatives:*

The farmers' association organized under the umbrella of the community seed bank complex is slightly dominated by men. Since households were represented by women. The women farmers participate actively in the PVS and food-tasting panel activities. Young and old farmers are also equally represented in the groups. The elder farmers participate in exchanging knowledge and practices regarding the conservation, enhancement, marketing and utilization of diverse local plant genetic resources. 240 Ejere farmers are legally registered as members of a farmers' association called '*Ejere area farmers' conservator and seed producer cooperatives*'.

#### *Training:*

Formal and informal training is provided to farmers by EOSA, agricultural development agents, and researchers involved in crop improvement activities. The training programmes are carried out in collaboration with national and international organizations. The subjects dealt with in such programmes include participatory varietal selection, quality seed production, soil fertility management, integrated pest management, community seed bank management and on-farm conservation of local varieties.

#### *Networking and partnership development:*

EOSA believes that the concerted and coordinated efforts of different actors are crucial for achieving meaningful development. EOSA organizes various fora that bring together research institutions, food processing industries, government offices and NGOs engaged in the field of agricultural and rural development. Field days, as well as seed and food fairs, are organized by EOSA to share experiences and lessons learned on the conservation and use of farmers' varieties.

## **3.2 Chefe Donsa site**

### **3.2.1 Introduction**

The CBM site of Chefe Donsa is located in the central highland areas of the Oromia region of Gimbichu district, and includes numerous households that cover 14 kebeles (villages). The area is characterized by a crop-livestock mixed farming system. The soil is predominantly vertisol. There is an annual rainfall of about 1000mm, most of which is concentrated in the summer season. The site area is at an altitude of more than 2500 masl. Agriculture is still the mainstay and the source of revenue of the community. Livestock, wheat, and legumes such as chick pea, lentil and grass pea provide the major cash earnings in the area. A few farmers near the town of Chefe Donsa are involved in the grain trade, butchery, the cattle business, and rural shops. The largest and nearest grain market for the farmers is located in Addis Ababa.

The Chefe Donsa area was considered to be one of the diversity hotspots of tetraploid wheat. Considerable collections of durum wheat were obtained from the surrounding areas of the site. However, environmental changes and changes in agricultural practices, including the replacement of diversity-based cultivars with the introduction and release of uniform semi-dwarf varieties by Haramaya University and the Debre Zeit Agricultural Research Centre (part of the national agricultural research system), threatened crop genetic diversity and disrupted socio-economic, agro-ecological and biological conditions. The consequences of genetic erosion in agricultural crops, including the tetraploid wheat, are significant and together with land fragmentation of the farms it remains one of the main production constraints for the farmers. Massive efforts have been made to restore the cropping pattern through the reintroduction of lost crop diversity, as a result of which at present there is a relatively balanced occurrence of cereals and legumes at Chefe Donsa and the

surrounding areas. To sustain and systematize the approach, the farmers have been organized into crop conservator and seed producer groups and also own and fully manage a community seed bank complex.

The farming system of the project area is mainly based on small-scale production, which is managed with traditional production technologies. Farmers involved in on-farm conservation, seed banking and seed production activities are composed of representatives from 14 kebeles of Gimbichu district. Members belong to the Oromo and Amhara ethnic groups, and as such Oromifa and Amharic are the main languages spoken. These farmers are predominantly Christians (Orthodox and Protestant).

The farmer association that owns the community seed bank complex is made up of household representatives, which are for the most part men. There are only a few women household representatives in the association. Women farmers are involved in income generation, in participatory knowledge sharing events like PVS and food fairs or exhibitions. Young and old farmers are involved in the knowledge sharing practices for the conservation, enhancement, marketing and utilization of the diverse plant genetic resources. Chefe Donsa seems to be better connected with the extension services than Ejere. Like farmers in Ejere, farmers in Chefe Donsa use animal power to plough, and manual labour for sowing and harvesting. Animal husbandry represents a larger part of the agricultural activities and is a way of saving resources (\$\$). The labour exchange and wage labour systems are also common practices in the site, as in Ejere. The farmers are more inclined to conserve the local varieties as guardians of agrobiodiversity. They participate in the seed production and local sale of seeds.

The Chefe Donsa site mainly focuses on the reintroduction and on-farm management of traditional wheat varieties and some legumes. The reason for focusing on these wheat types is that such valuable resources are totally neglected by the formal research, extension and seed supply programme. The research and development agenda focuses on introduced germplasm, which perform well under high input situations, but which are frequently susceptible to biotic and abiotic stresses that have direct negative impacts on the livelihoods of the community. The reintroduction and participatory selection of varieties of these traditional wheat species under on-farm conditions, with the full participation of farmers, contribute to *in situ* PGR conservation and sustainable utilization.

### **3.2.2 CBM approaches and processes**

The major steps that were taken while starting the implementation of EOSA's integrated agrobiodiversity management and seed security programme at Chef Donsa include:

- Organizing frequent awareness-raising programmes on issues of PGR management and environment degradation.
- Carrying out an inventory and understanding the level of crop diversity, including the development of baseline surveys, tracing back the previous diversity from the national genebank, and discussions with elderly farmers for documenting the knowledge and practices associated to those traditional crops/varieties.
- Strengthening the seed production of selected/enhanced traditional varieties to address the growing demand for seed from farmers in the surrounding areas.
- Promoting value addition programmes for enhanced traditional wheat varieties.
- Conducting seed fairs and food-tasting panels that display a larger diversity of crops and varieties with the associated local food options.
- Scaling-up and strengthening the community seed banking system.
- Capacity-building of farmers and their institutions.
- Setting-up institutional working modalities.

- Restoring the cropping pattern using the older collections from the locality.
- Providing continuous backstopping to ensure sustainability of the approach.
- Scaling-up good practices of CBM.

### 3.2.3 CBM practices

#### *Community awareness:*

The aim of this initiative is to raise awareness on the need for integrated agrobiodiversity management and to motivate the community to manage and conserve biodiversity at household and community levels, using the village-based ‘community seed bank’ complex. This initiative is also designed as an early warning system on the state of PGR and the environment in general.

#### *Community seed bank:*

This facility provides storage for germplasm, seed and grain at village or community level. This structure maintains a sustainable distribution of quality seed, adapted to the locality (through a revolving seed fund) and developed from enhanced local varieties. The community seed bank (CSB) links the on-farm management of biodiversity with the formal conservation of genetic diversity *ex situ*. This village-level farmer-managed facility also serves as a centre for community empowerment.

#### *Participatory varietal selection (PVS):*

PVS of enhanced forms of landraces ensures the sustainable management and use of biodiversity. The main objective of this practice is to select better performing or desirable varieties or accessions from heterogeneous populations. The aim is that the selected varieties will contribute towards community seed security and ensure the continued use of crop genetic resources.

#### *Conservation and reintroduction of the local wheat varieties:*

So far more than 90 varieties of wheat are conserved in the CSB, and are also frequently checked for their adaptation on-farm. About 10 varieties have been selected by farmers in a participatory scheme and the seed revolves annually amongst member farmers. Seeds of some varieties are distributed formally and informally beyond their members or locality. A number of important legumes such as chick pea, grass pea, and fenugreek are being conserved and multiplied by members of the CSB (as a source of cash and for use in crop rotation in order to maintain the soil fertility status).

#### *On-farm seed multiplication:*

Seed multiplication includes enhanced materials and basic seeds obtained from the national agricultural research centres and the national seed enterprise.

#### *Reintroduction, on-farm conservation and enhancement of farmers’ varieties:*

This activity includes the restoration of the cropping pattern, and of the displaced genetic diversity of durum wheat and sorghum landraces, for which Ethiopia is centre of diversity. This restoration and the broader range of options of locally adapted planting materials are critical for ensuring seed security of the farm households and also for coping with the growing challenges of climate change. The enhancement of local materials is carried out in a participatory process where partners i.e. experts from research and teaching institutions, as well as agricultural development workers, team-up with farmers, the latter playing a dynamic role in the activity. Such integration promotes synergy between the formal and informal knowledge systems.

#### ***Revitalizing and strengthening the local seed supply system:***

To ensure seed security, EOSA provides technical support to the community seed bank in East Shewa (Chefe Donsa). The community seed bank acts as a bridge between the formal genebank and the individual seed stores, at household level. The seed bank has short and medium term storage facilities and, therefore, serves as a seed reserve to stabilize the local seed supply in case of unexpected crop failures.

#### ***Crop and livelihood diversification:***

Diversification is the key to ensuring food and livelihood security. EOSA promotes the diversification of planting materials to break the cycle of mono cropping, diversify dietary sources, enrich soil fertility, generate income and ensure harvest security. Livelihood diversification activities include vegetable production as well as the production and marketing of improved energy-saving stoves by women. The initiatives tried out on a pilot basis have been well accepted by the farming communities and have raised a good deal of interest.

#### ***Networking and partnership development:***

EOSA believes that the concerted and coordinated efforts of different actors are crucial to achieving meaningful development. Along this line, EOSA organizes various fora that bring together research institutions, food processing industries, government offices and NGOs engaged in the field of agricultural and rural development. Field days, seed and food fairs are also fora that EOSA deploys to share experiences and lessons learned on the conservation and use of farmer varieties. The entry point for the CBM practices in Ethiopia in general, and that of Chefe Donsa in particular, is the reintroduction of traditional wheat varieties followed by capacity-building, community seed banking, PVS, seed production, seed fairs, and food-tasting panels.

#### ***Training:***

Formal and informal training has been provided to farmers, agricultural development agents and researchers involved in crop improvement activities. The training programmes are carried out in collaboration with national and international organizations. Participatory varietal selection/breeding, quality seed production, soil fertility management, integrated pest management, community seed bank management and on-farm conservation of local varieties were the key issues addressed.

#### ***Chefe Donsa area farmers' conservator and seed producer cooperatives:***

Interested small scale farmer holdings are the primary stakeholders. About 496 men and 70 women are members of the legally registered farmers' association, '*Chefe Donsa area farmers' conservator and seed producer cooperatives*'.

#### ***Seed Cleaning Facility***

The seed producer groups currently own a seed cleaning facility, obtained with a support from the Food and Agriculture Organization of the United Nations (FAO). A separate women's association has also been set up for conducting different income-generating activities, such as the production and marketing of energy-saving biomass stoves and vegetables.

### **3.3. Harbu site**

#### **3.3.1 Introduction**

The Harbu site is located in the Amhara Regional Government area in the northern part of Ethiopia. Amharic-speaking Muslims are the dominant inhabitants of the site and its surrounding areas. The area is characterized by a crop-livestock mixed farming system. The agro-ecology ranges from lowland to

mid-altitude conditions. The altitude is less than 1500 masl. The area is generally characterized by an undulating topography with a marginal and fragile environment that frequently encounters drought stresses. In most of the areas the fertility is variable but the soils in the lower parts are of good fertility. The stoniness of the soil is mostly visible in the steeper area. The area is also considered marginal for the formal research and development initiatives of the region. The land is fragmented, as compared to other sites. The area is largely a sorghum-based farming system and hence sometimes referred to as the '*Country's Heart of Sorghum Diversity*'. Teff, chick pea and different fruits and vegetables are also cultivated in the site. There were attempts to introduce wheat in this region. Subsistence agriculture is the mainstay of the farmers' livelihoods.

The infamous drought of 1984 resulted in serious environmental degradation and threatened the home of sorghum genetic diversity. Moreover, the drought disrupted socio-economic, agro-ecological and biological conditions. As a consequence of this genetic erosion and the lack of any planting materials, the farmers suffered. The Seeds of Survival (SoS) Programme was initiated by the Unitarian Service Committee of Canada (USC) to restore the cropping pattern and to support the desperate farming community. Significant investments have been undertaken since the initiation of the integrated agrobiodiversity and seed security programme at Harbu.

The farming system of the Harbu site is based mainly on small-scale production, which is managed using traditional production technologies. Farmers involved in on-farm conservation, seed bank and seed production activities are composed of representatives from four kebeles of Kalu district. Membership of the farmers' association is slightly dominated by men, with few women heads of households represented. Young and old farmers are equally represented in the target groups. The presence of older farmers is to incorporate farmers' time-tested knowledge and practices in the conservation, enhancement, marketing and utilization of diverse plant genetic resources. About 200 men and 27 women farmers are members of the legally registered farmers' association, '*Harbu area farmers' conservator and seed producer cooperatives*'. Currently, the farming community owns an additional CSB complex, in a well-ventilated upland area of Harbu, to facilitate the prolonged storage of seeds (sorghum) without using artificial ventilating facilities. Members are mainly Amharic-speaking Muslims.

Since the establishment of the SoS programme in the Harbu-Wollo area, the prime focus was on the restoration and reintroduction of the lost sorghum genetic diversity. Previous collections from the national genebank, and target collections from households in pocket areas, enable the programme to enrich sorghum diversity again. The reason for focusing on diversity is that the area is known for maintaining several sorghum varieties on-farm. The livelihood of the whole community depends on sorghum. The vast importance of traditional sorghum varieties has not been fully recognized by formal research, extension and seed supply programmes. In other words, sorghum has long history of environmental, socio-economic, cultural, and ethno-botanical linkages with the farmers of the region. There is also a considerable diversity of teff in the region.

The farming community in Harbu and the surrounding area is interested more in the traditional sorghum varieties because of their unique adaptation potential to harsh environmental conditions; their ability to give optimum yield with no or minimal inputs; their support to household or community level seed security; their diverse socio-economic and cultural importance; their desirable nutritional values, and the multiple-use nature of the stalk for construction, fencing, firewood, livestock feed, and so on. The reintroduction and participatory selection of sorghum varieties under on-farm conditions, with full participation of farmers, forms the basis for *in situ conservation* and CBM practices in

Ethiopia. More than 66 morphotypes or intra-specific varieties of sorghum exist in the Harbu area of the South Wollo zone.

### **3.3.2 CBM approaches and processes**

The major steps undertaken since starting to implement the integrated agrobiodiversity management and seed security programme in the Harbu area of Kalu district include:

- Organizing frequent awareness-raising programmes on issues concerning PGR management and environmental degradation, with particular focus on climate change.
- Carrying out an inventory and understanding the level of crop diversity, through baseline surveys, tracing back the previous diversity from the national genebank and discussions with elderly farmers for documenting the knowledge and practices associated to those traditional crops/varieties.
- Capacity-building of farmers and their institutions at different levels.
- Setting-up institutional building processes.
- Restoring the cropping pattern by reintroducing older collections from the locality, maintaining the community seed bank, participatory variety selection, seed multiplication and distribution, and other practices.
- Continuous backstopping to ensure sustainability of the approach.
- Scaling-up and strengthening the community seed banking system.
- Strengthening the seed production of selected/enhanced traditional varieties to address the growing demand for seed by farmers.
- Promoting value addition programmes for enhanced traditional sorghum varieties.
- Conducting seed fairs and advocacy work, displaying a larger diversity of crops and varieties with the associated local food types. Through this practice, public and private sectors can learn about the increasing number of challenges to seed and food insecurity, accelerated drought due to climate change, and other biotic and abiotic stresses.

### **3.3.3 CBM practices**

As with the CBM sites of Ejere and Chef Donsa, community awareness-raising, the community seed bank, participatory varietal selection, and the farmers' cooperatives, are the key activities of community biodiversity management. The Harbu area has an additional seed bank with natural ventilation, located in an elevated part of the region. The new facility could facilitate more interaction between farmers and scientists.



#### 4. Diversity of sites: impact on empowerment

Ejere represents one of the most favourable production environments in Ethiopia, for most of the crops that are adapted to central highland areas, in terms of soil fertility and access to market and extension services. The farmers in Ejere have better formal and informal contact with agricultural extension services. Such connections have enabled them to have a greater access to improved seeds from the very beginning, when the government extension services started promoting improved wheat varieties. Despite the fact that the farmers are more inclined towards growing modern varieties of chickpea “Kabuli” and wheat, in order to benefit from market incentives, the cultivation of landraces is important to the community. It seems to us that the Ejere community is proactive and knowledgeable concerning the cultivation of crop varieties and landraces for the markets of this region. The cultivation of cereals, largely teff and wheat, as well as legumes (chickpea, fenugreek), is at present quite visible in Ejere and in the surrounding areas. To sustain the conservation and use of traditional landraces and varieties, farmers have been organized into crop conservator and seed producer groups, enabling them to own and fully manage a community seed bank complex. The mechanisms to support local farmers’ efforts in managing the genetic resource-base and its diversity, while increasing production and productivity, have been developed and promoted. The farmers have a strategy to promote on-farm diversity, to spread the risks, as well as add value to local varieties, through seed production and market linkages to obtain economic incentives for strengthening the local seed supply system. The CSB was established as a community-based seed network where seed and grain reserves, and access to markets, form the back-up strategy. This contributes to food and seed self-sufficiency at local, community level. However, strong marketing links between local farmers and users, such as food industries, need to be strengthened. There is the capacity to promote organic agriculture and introduce the products to organic market outlets.

Whereas the Chefe Donsa site represents the same agro-ecology, it is comparatively less fertile and is located at a greater distance from the markets than the Ejere site. Farmers in Chefe Donsa have been cultivating traditional varieties in a larger area than in Ejere although this is linked to the agricultural research and extension services that promote improved varieties. Because of the soil and agro-climatic variations, farmers rely on traditional rather than improved varieties. The farmers grow purple wheat in a larger area, and have maintained a higher number of farmers’ varieties in the seed bank, than the farmers in Ejere. Every household appears to be aware of the need to maintain enough seed stocks to use for repeated seeding if necessary. The management of the cooperative seems to be more effective than in the other two sites, in terms of building maintenance, record keeping and the development of operational strategies to provide better services locally to their members. It also has a stronger leadership to deal with outsiders. The decision to increase the number of members in the cooperative, in order to have access to seed and other benefits of the community seed bank complex, are expressions of the more innovative and strategic ways in which this cooperative operates.

In the Harbu region, farmers mainly cultivate varieties of sorghum. The area is prone to drought and is, for the most part, marginal, in terms of soil fertility. These are the key factors that led farmers in this region to take up rain-fed farmers’ varieties like sorghum. The topography of the area is undulating terrain and farmers are increasingly cultivating on terraces as a strategy for soil and water conservation, owing to EOSA’s intervention. It is clear that EOSA has a strong presence in the site, for strategic reasons. The restoration of the disrupted cropping pattern, awareness-raising, establishing and maintaining the community seed bank, PVS, and capacity-building activities, are being implemented

with the full participation of target farmers and other concerned stakeholders. The CSB complex is fully managed and administered by member farmers. Decisions regarding revolving seeds, variety selections, and the sale of any surplus, are the responsibility of member farmers and their management body. Since its inception, EOSA has been strongly supporting the local cooperative to enable them to establish an autonomous community-based decision-making process. The CSB at Harbu is the model for all other CSBs in EOSA programmes. EOSA itself has learned and benefited a lot from the CSB experience of Harbu, which contributes significantly towards further improvement, building self-confidence and self-reliance of farmers in food production, economic empowerment and ensuring food sovereignty.

## 5. Historic drivers for empowerment

Ethiopia was known as *Abyssinia* until the twentieth century. This country is the oldest independent country in Africa. The ancient monarchy maintained its power right up until the 1970s, except during the brief period of Italian colonization, from 1936-1941. Ethiopia is unique among African countries and is widely considered to be the site where man emerged in its history of development. Many parts of the country have already been identified as the centre of diversity for crops, particularly durum wheat, sorghum, teff, coffee, some legumes, and oil seed crops (niger seed, sesame, safflower). It has shown evidence of how human development and the domestication of crops and livestock went together hand in hand, in the past. The country is still harbouring rich genetic resources of both crops and livestock in its diverse agro-ecology and farming systems.

Historically, until now, agriculture has been the mainstay of the Ethiopian economy. This sector accounts for about 45% of the national GDP, generates about 90% of export earnings, supplies about 70% of the country's raw materials required by agro-industries, and is supporting for more than 85% of the total employment. The rural population is entirely dependent on farming activities for their livelihoods. However, the agricultural sector, which is largely rain-fed in Ethiopia, has suffered from frequent droughts and the subsequent attacks of pests and diseases, resulting in famine.

From discussions with farmers of the study-sites, and scientists working on plant genetic resource management, it was found that the loss of crop landraces began during the mid 1970s and ended during late 1980s, with mostly modern varieties. It coincided with the severe drought and outbreak of pests and diseases, and also with the great political movement that led the nation to the socialist or military regime in 1974. Improved varieties and foreign food aid were brought in, in an attempt to increase production and feed the people who were victims of the drought. This triggered the loss of crop landraces and also changed the production system towards high input monoculture in some parts of the country.

The farmers of the central highlands, particularly in Ejere and Chefe Donsa, still remember the historic wheat devastation of 1974, caused by pests and disease (rust), as being when they lost their local wheat landraces. The socialist government introduced modern bread wheat varieties in the area and promoted their use under the communal system of production. It was largely a commercial monoculture for which the state provided inputs and pesticides at a subsidised price. Even though the state introduced the modern varieties, the farmers of Chefe Donsa suffered more than Ejere with their wheat crops due to the loss of their locally adapted landraces.

The Harbu village, located in the northern highlands of the country, represents one of the drought-prone marginal areas. It was known for its high diversity of sorghum, which declined gradually after 1975 because of frequent droughts and the introduction of modern crop varieties by government extension services. However, modern semi-dwarf sorghum varieties did not perform well in this dry marginal environment and farmers were disappointed.

By the late 1980s, the negative consequences of such high input monoculture was apparent in terms of loss of crop landraces (cereals, legumes and oilseeds), soil fertility degradation as well as higher production costs due to increased input prices. Production costs increased by more than 35% since there were no government subsidies on inputs, unlike before. Farmers in drought-prone areas such as

Harbu, and in marginal production environments like Chefe Donsa, realized the increased cost of production would obtain few benefits from the market, since they were selling only the surplus amount after home consumption. Furthermore, the farmers realized the multiple uses of the landraces and that they had better quality traits for preparing traditional foods, and also better adaptation traits, than the modern varieties, particularly during the drought years.

In the meantime, some visionary scientists, particularly Dr Melaku Worede, the then Director of the Plant Genetic Resources Centre/Ethiopia (PGRC/E), and researchers such as Mr. Hailu Getu and Dr. Regassa Feyissa from the Institute of Biodiversity Conservation and Research (IBCR), were worried about using such intensive modern agricultural inputs and food aid to feed the population in a sustainable way. They realized the greater loss of indigenous crop landraces, and its effect on farmers' livelihoods, as they were almost at the stage of losing their control over their seed, which had been better adapted to produce under adverse and low input conditions.

Dr Melaku conceptualized the idea of collection, enhancement and promotion of durum wheat landraces for central highland areas, and sorghum for northern midland areas, to sustain on-farm production and conservation in a participatory way. It was often very difficult to convince the government and international community.

Finally, the scientists initiated a project under the national genebank with support from the Unitarian Service Committee of Canada (USC Canada), and named it Seed of Survival (SOS). The project started to collect and enhance farmers' varieties and gave seeds back to farmers with the major focus on durum wheat in the central highlands (Ejere and Chefe Donsa) and on sorghum for Wollo in the northern parts of the country. Later, in 1996, a project funded by the Global Environmental Facility (GEF) of the United Nations Development Programme (UNDP), under the IBCR, continued and scaled-up the activities to utilize durum wheat and sorghum landraces in their respective domains, through on-farm demonstrations on conservation, variety selection, community seed banking, seed multiplication and distribution initiatives.

Dr. Regassa was the successor of Dr. Melaku in the SoS programme. As part of the implementation, the CSB approach was adopted to organize communities in a cooperative mode and empower them both technically and institutionally so as to increase the community's role and capacity for sustaining the on-farm conservation of target farmers' varieties in the respective sites. The project constructed twelve seed banks in various strategic areas of the country, taking into account the diversity rich areas and finally handed them over to the farmers' cooperatives. After retiring from the IBRC, and establishing the NGO, Ethio-Organic Seed Action, in 2003, Dr. Regassa began to strengthen these seed banks and the cooperatives in order to continue the conservation, sustainable use and promotion of farmers' varieties (for more details see Annex 2).

Gradually, community seed banks and the cooperatives of the CBM sites in the central highland areas (Ejere and Chefe Donsa) and the CBM site at Harbu have been continuing the conservation and promotion activities with technical support from EOSA. EOSA has been playing a facilitating role to promote learning and sharing among scientists, extension workers and farmers for increasing capacity as well as generating the knowledge base for its wider application and dissemination within and outside the country.

In the past, Ethiopia has been through very difficult situations, like crop pests and diseases, and droughts, which have led to food and livelihood insecurity and famine. Although the farmers had all

the insights into testing modern varieties, using inputs as well as improving production practices, mostly facilitated by the government extension services during 1975-1995, they did not address the major problems faced by the farmers and instead, rather increased their vulnerability. As an option, farming communities organized and started working more closely with institutions such as the national genebank, donors, NGOs like EOSA, extension offices and so on. During the process, farmers were empowered by organizing themselves to cope with the changing socio-economic and political conditions. Farming communities in the study-sites are using the lessons learned from past experiences of success and failure to adapt themselves for the future.

## 6. Cultural drivers for empowerment

It is clear that Ethiopia has rich socio-cultural traditions, which are deeply rooted in both rural and urban society. The way the people dress and take part in celebrating festivals and ceremonies give the impression of a very unique culture to outsiders. In the food culture of orthodox Christians, there are two fasting days in the week (Wednesday and Friday) when meat and milk products are prohibited. This tradition has been maintained and passed down through generations. Although there have been gradual changes in lifestyles due to education and modernization, traditional festive and food cultures exist everywhere. Communities prefer to prepare and eat injera using teff and other local crops as a main course. Unlike many other countries, the traditional food dishes, such as injera and tella (a local drink), are being promoted nationally and are therefore available everywhere in urban cafés and restaurants. This has motivated people to learn, prepare and consume cultural foods, which ultimately provide incentives to rural farmers who are growing teff, barley, durum wheat and many other indigenous crops. Serving coffee in a cup immediately after the food is very traditional and is still common not only in rural villages but in every city. These socio-cultural traditions are empowering the farming community to link the conservation and utilization of crop diversity, which has already been documented, and published (Bayush and Trygve, 2007<sup>1</sup>).

The Ejere and Chefe Donsa villages, which are located in the central highlands of the Oromia Regional State, share similar agro-ecological and socio-cultural conditions. There are two main ethnic groups in the area: Oromo (majority) and Amhara (minority), and they speak both Oromifa (regional) and Amharic (national). The majority of the inhabitants of both sites are followers of Orthodox Christianity. The farmers in Ejere and Chefe Donsa observe and celebrate similar festivals, such as Ethiopian New Year, Mescal, Christmas, Easter and the Epiphany. During every festival, the villagers prepare the local food, tella, using local wheat landraces. During Easter, in particular, the villagers prefer to slaughter sheep, cows and chickens, and prepare traditional foods. This reflects the close relationship between the food culture and the crops and livestock the communities produce. In the village of Harbu, Muslims are the dominant ethnic group and they celebrate the Islamic festivals. However, no difference was observed in the food culture within the ethnic groups in the study sites. They live in harmony, respecting each other's values and sharing food traditions.

Unlike many South Asian countries where there are multi-ethnic cultures, the Ethiopian society has a more homogenous social construct with little or no social discrimination. There are differences among community members with regard to landholding size but these differences are not reflected by economic classes in the society. The socio-cultural structure of society is one of the bases for the division of work among men and women in the households. They share labour practices and seed exchange practices commonly, as seen in all sites. These traditions enabled farming communities to continue with the conservation and use of the traditional crops and varieties as well as with the enhancement of associated knowledge. In addition, these socio-cultural traditions are important for sharing and providing opportunities to individuals to participate in different events in the society.

In the northeast of Brazil, the community in the CBM site of Porteirinha began as a homogeneous community. Later, several Christian churches arrived in the area and started to work with the community, bringing about social improvements and changing the matrix of religions; without

---

<sup>1</sup> Bayush Tsegaye and Trygve Berg, 2007. Utilization of durum wheat landraces in East Shewa, central Ethiopia: Are home uses an incentive for on-farm conservation? *Agriculture and Human Values* 24 (2): 219-230.

changing the livelihoods. Historically, in Brazil, economic developments involved different production systems (cotton, dairy cattle, beef and leather, mining, coffee, etc), with high specialization in the systems, direct marketing and assistance (industries, exporters, input companies connected to farmers) resulting in the loss of agrobiodiversity, land degradation, land claims and the loss of autonomy.

In all the CBM sites in Ethiopia, men are responsible for representing the households and therefore are better exposed and empowered than women. The team realized that a blend of traditional and modern cultures exists side by side in Ethiopia. From the CBM perspective, the way the communities have maintained the food traditions can be considered the main cultural driver for continuing the conservation of local landraces. Their maintenance of socio-cultural traditions that are deeply embedded in the community, promotes the utilization and conservation of indigenous crops and animal genetic resources in the study-sites, and also in the country as a whole.



## 7. Drivers for CBM

From all the discussions with the stakeholders working in agrobiodiversity conservation, it is evident that the most significant driver for conceptualizing and initiating the CBM processes and practices in the context of Ethiopia, is the loss of their durum wheat and sorghum landraces due to recurrent droughts and pests; and the introduction of modern varieties. In 1974, drought, pests and diseases caused devastation in the wheat crops of central highland areas, and as a consequence the farmers lost durum wheat landraces. Similarly, due to recurrent droughts in the 1980s, the sorghum diversity of the northern highlands was reduced considerably, affecting rural livelihoods. If those natural calamities had not occurred and the farmers had not lost the diversity of landraces, the communities may still not have realized the need to initiate CBM practices. In the late 1980s, a group of scientists working at the Institute of Biodiversity Conservation and Research (IBCR) realized the immediate need to develop an agenda for action to conserve, utilize and promote wheat landraces, particularly durum wheat and sorghum, and they initiated the reintroduction of landraces through the support of the GEF and USC-Canada programmes. To continue this dynamic initiative, EOSA was established early 2003, and took on the lead role in on-farm management, and the use and promotion of farmers' varieties like durum wheat and sorghum, in strategically selected locations. Therefore, 2003 was the milestone for initiating the CBM concept in Ethiopia and empowering scientists and development workers, through awareness-raising activities and the establishment of conservation organizations like EOSA.

From the community's perspective, CBM was initiated and accepted when the seed bank was established, strengthening the local seed supply system. Efforts were made to empower the communities for conserving and enhancing germplasm of durum wheat and sorghum on-farm, by participatory varietal selection, mass production of quality seeds and distribution using the community seed bank approach. Initially, it was hard to convince farmers from the central highlands (Ejere and Chefe Donsa); an area which represents a high production environment, to produce forgotten wheat landraces, but many of them increasingly realized their value in terms of quality, adaptive traits and low input requirements.

The Seeds of Survival (SOS) programme initiated the intensive restoration of local landraces with on-farm demonstrations, and seed distribution, and also provided incentives to farmers by buying seeds at a premium price for the initial years. However, farmers of the Harbu site, which represents a more marginal environment for crop production, were eager to accept the sorghum landraces and therefore adopted the programme easily from the very beginning. The communities of Ejere, Chefe Donsa and Harbu appreciate the contribution of pioneering scientists and EOSA in encouraging and empowering them for the utilization of local crops. EOSA is a key institutional driver that not only links community groups with extension agencies, national genebanks and research centres, but also attempts to link them to the markets in Ejere and Chefe Donsa. The capacitating process of EOSA is a triggering factor that has empowered communities in terms of awareness, regulating the functions of the cooperatives, management of the seed bank activities and also participation in the collective decision-making processes. It is, needless to say, the key contributions of the eminent scientists and development catalysts like Dr. Melaku Worede, Mr. Hailu, and Dr. Regassa, who took path-breaking decisions, at different points in time, to conceptualize and effectively implement changes in empowerment, although the scale is varied between sites due to varied contexts and needs of the communities.

## 8. Definition for empowerment

The team agreed that empowerment is the most targeted outcome in any interventions that lead towards sustainability in the long run. However, it was complex for us to define exactly what it meant to farmers, stakeholders and others, in the context of CBM in Ethiopia. We attempted to look at it by disaggregating empowerment into elements, such as technical, social, economic and legal domain. EOSA has been treating the farming communities in Ejere, Chefe Donsa and Harbu, in more or less the same way. There are no significant differences in the educational status and food culture of the communities. However, there are differences in production resources.

The Harbu community is more marginal in terms of production environment and the landholdings are small compared with those of Ejere and Chefe Donsa. The level of awareness, technical skills, social mobilization, group coherence and collectiveness, as well as legal understanding, regarding crop genetic resources, were similar among the three sites, owing to the fact that the same kind of CBM practices were facilitated in the sites. In other words, the package of practices, and the duration of the communities' participation in the CBM processes, was very similar. Due to the time limitations of the current study, a more in depth analysis was not possible.

Analyzing the views of community, they relate empowerment to the quality of life. For them, *“empowerment is to increase the level of self-confidence in decision-making, through acquiring knowledge and skills to influence others and identify opportunities for a better life.”* The farming communities are looking forward to gaining more knowledge and skills, and to working in a more organized way in order to increase their income and sustain and improve their living conditions. However, from the outsiders' perspective, we felt that there was more of a focus on social aspects, which is a prerequisite during the initial stages. After EOSA came in to the picture, the community groups turned their attention to economic aspects in order to demonstrate the benefits that lead towards sustainability.

If we analyze the discussions held with a number of EOSA staff members who are working with these community groups, empowerment is *“a process that increases the capability of smallholder farmers and their groups to make choices and to have an influence in making collective decisions, in an autonomous way, towards desired actions and outcomes”*. Information is a key to begin with, for all of these processes. The stakeholders', particularly the government extension agency's, perspective on empowerment in Ethiopia is to *“capacitate farmers and their groups through providing inputs such as training and technology to enhance their social and financial capital, which ultimately leads to increasing their self-reliance”*.

Invariably, in all the sites, *“freedom to decide, freedom of choice, and autonomous decision-making processes”* for better opportunities were expressed primarily by the farmers' cooperatives, which gave us the impression that empowerment in the contexts we studied in Ethiopia could be the *“ability of farmers to congregate; collectively learn and practice in groups; recognize and share knowledge among farmers and scientists; help and support other farmers with material and skills; and take decisions to manage their resources suitably in order to enjoy the autonomy and freedom of choice of living, question and clarify doubts and be aware of the nuances in the use and abuse of PGRs from external elements”*.

## 9. Community within the term CBM: is this collective management?

In general, collective management is considered according to the increased participation and concerns of community members, who share the material and knowledge, resolve conflicts and carry out decision-making processes. These are the elements that ensure the sustainability of the community-based organizations in the long run. The CBM practices in Ethiopia have been institutionalized in the form of farmer cooperatives. These community-based organizations are legal entities, governed by the respective district authorities of the regional states.

There are a general set of functional and management rules and regulations governing these organizations. The members of the executive committee and its sub-committees have improved their capacities in terms of knowledge and skills, as well as in dealing with others through participation in the CBM processes, thereby their leadership skills, confidence and loyalty are visible. The team observed similar conditions in Ejere, Chefe Donsa and Harbu, although the chairman of the Chefe Donsa site seems to be more authoritative than the chairmen in the other two sites. By and large, collective decision-making processes are being carried out in all the sites.

From our observations, quality participation by the women, and the ability to voice their concerns in the committee, was relatively higher in Ejere and Chefe Donsa, than in the Harbu site, as this site is composed of Muslim ethnic groups. However, when we looked at individual households, there is always collective decision-making among household members for selecting crops and allocating resources.

We got the impression that there is an increasing interest among women and men of the farming community cooperatives, to access seeds and knowledge, in Chefe Donsa and Harbu more so than in Ejere. Invariably in all sites, there was enough of an indication of the active participation of “*Guardians of Biodiversity*” in the cooperatives, those community members who conserve the most local varieties in the villages, and who contribute seeds to the system thereby contributing to conservation and reducing the vulnerability of the farming community in the respective sites. Those guardians/custodians of agrobiodiversity share their materials and knowledge with the community at collective and individual levels. The seed-sharing and seed-revolving mechanisms are the key collective elements of empowerment, which have strong linkages with conservation and use, and also promote sustainability through addressing the some of the challenges of climate change.

All the CBM practices, such as the community seed bank, PVS, capacity-building and value additions, are implemented with the full involvement of target farmers and other concerned stakeholders. The seed bank complex is fully managed and administered by farmer members. Decisions concerning the variety selection process, the revolving seed system, and seed buying/selling, is the responsibility of member farmers and their management. Since its inception, EOSA has been encouraging the CBOs to follow the principles of collectiveness and autonomy to enable community-based collective decision-making processes.

## 10. Inclusion / equality and gender

Inclusiveness and gender participation in CBM practices is visible across all the sites. As per the social norms, men are the main representatives in social groups, except in women's groups. In other words, membership in the farmers' cooperatives at the three CBM sites is by household, not individual, and the head of the family is usually a man, hence their high representation. Only the women who are heads of households participate in the formal sense in all the cooperatives. Women participants of the cooperatives, i.e. heads of households, make up 28 representatives in Ejere, 70 in Chefe Donsa, and 27 in Harbu, reflecting the inclusiveness of the cooperatives. The cooperatives are inclusive for the membership of women and women-headed households. Invariably in all the locations, women have been given an opportunity to be a part of, or lead the sub-committees and take on responsibilities.

We noticed that the women had a stronger influence in Ejere, compared to Chefe Donsa and Harbu. Women in Ejere took the opportunity to express their opinions and points of view proactively in the assemblies. The women in Chefe Donsa and Harbu are less empowered to deal with the issues compared to the women in Ejere. This indicates the different levels of empowerment that are largely determined by the level of education, socio economic status as well as opportunities provided to them.

There are cultural constraints limiting the active participation of women in the public fora, which was evident in the Harbu site. Although the cooperative systems provide opportunities for the increased participation of women in different events, they are bound by the cultural and customary norms of their rural traditional society. Hence, socio-cultural aspects and levels of education are factors hindering participation and empowerment of Ethiopian women in general.

The fact that women are heads of various committees of the cooperatives was visible across all the sites. Being a patriarchal society, as is also the case of many South Asian countries, men play a lead role in the decision-making processes in the public fora. However, at the household level, joint decisions are often made by the women, who have a stake in making decisions related to crop diversity management, the choice of crops, and so on. The society in Northeast Brazil is also of a patriarchal nature. However, women in Brazil are currently enhancing their participation in the decision-making processes and are taking high positions in formal and informal social structures. This process began in the middle of the last century, when women were given the right to vote and be elected. Since then, women have been increasing their participation in the livelihood of the household, community associations, cooperatives and political positions.

Across the CBM sites in Ethiopia, women's groups are promoting energy-saving stoves to the members of the cooperatives. There have been attempts to demonstrate spaghetti-making machines to build the capacities of the women's groups in value addition to agrobiodiversity products. Women are being offered equal space to participate in knowledge-sharing events like PVS, food panels, and so on. Furthermore, women have equal opportunities for accessing credit, training and seeds.

There are a number of articulate women in the cooperative of Ejere who have participated in several national and international workshops, and whose contribution to CBM has been recognized. A woman member of the Chefe Donsa cooperative received a state award for her outstanding achievement and maintenance of diverse crops in the area. These are a few examples to indicate the level of empowerment of women in the CBM processes. They have been playing such crucial roles as master

trainers in the cooperatives, and have served as resource persons within and outside the community, including for the state mediated training programmes.

The cooperatives have played decisive roles in developing cohesiveness and consciousness among the members of the community, with collectiveness as the common goal. Credit groups and forests groups have been established by former members (both women and men) of the cooperatives. It is clear to us in all the study sites that women and men in the communities have gradually been empowered by participating in CBM processes, activities and events. All the sites follow the bottom-up approach in planning, where the communities themselves identify their needs each year under the broader framework of CBM.

## 11. Competing claims: land ownership, CBM and empowerment, marketing and varieties

Looking at the history of land ownership and its distribution in the country, the northern highland areas made up the core of the ancient Christian kingdom, and the southern highlands were brought under imperial rule after their conquest. This was reflected in the land tenancy systems. In the North, there was a kind of communal system of ownership called *Rist*. The Orthodox Christian church also held large areas of land. In the south, the land was in the hands of the state, the church and local leaders (landlords).

In Great Rift Valley system, nomads controlled the land for grazing according to transhumance tribal customs. Landownership practices were complex up until 1975 when the socialist government reformed and nationalized all rural land without compensation. All commercial farms remained under state control and granted each farm family so called “possessing rights”, to use the land for farming. The land reforms abolished all tenancy systems and changed landowning patterns, in favour of small landholders. They provided an opportunity for small farmers to grow more crops as well as establish and participate in associations. The same policy still governs state land and there are separate tenancy systems for urban settlements and rural farmlands.

Unlike the urban policy, rural land policy does not allow the landowner to sell their land but rather pass it down to their offspring over generations for farming. However, in practice, it is more common to provide land to those family members who have no other opportunities and rely on farming. In our view, such a land policy and practice has increased land fragmentation and might discourage long term investments, such as plantations and soil and water conservation practices, for the better use of the land resources to produce crop diversity on farm.

In cases where the government seized farmland for some reason, the landowner, and his family, will have been displaced from their society, although compensated. From discussions with the farmers and stakeholders of CBM sites, it seems likely that such cases will appear more in the future than now, in more accessible areas, due to the increasing interest of multinational companies involved in the establishment of industries and high tech-agriculture. There have already been incidents of land seizures in peri-urban areas, which have led to the displacement of small farmers and the total loss of crop-land. Such incidents have not yet been observed in the study areas. In the Ejere, Chefe Donsa and Harbu areas there are no conflicting situations regarding land ownership and tenure. The practice of leasing land seems common in the Ejere and Chefe Donsa sites, which may be due to the class differences in the community, and the lack of financial and human resources, but this land issue needs to be further verified. Details regarding the use of leased lands, the choice of crops grown on those lands, and the influence of these trends on traditional farming systems, are pertinent to the current study but due to time constraints the team could not dwell on this further. It was clear that the communities are faced with the challenge of accommodating growing families and the migrants of other villages and therefore the farmers’ associations are often advocating policy adjustments to address these problems.

The farmers were reluctant to invest in infrastructure to improve their farms simply because of the fear that they would not receive adequate compensation in the case of land seizure. It seems there are no

easy state financial mechanisms for agriculture that could help small landholders with crop loans and subsidies.

In the case of Brazil, farmers own or rent land, or occupy open, occupy lands that belong to the government. Most of the investments, nowadays, are supported by the farmers themselves, or by official programmes to finance activities of small farmers, like the National Programme for Strengthening Family Farming (PRONAF). Other ways to support investments are through social security, public policies to support the poor people, and programmes to improve infrastructures like roads, places for markets. Unlike the farmers in many countries in Southern Asia and Brazil, the farmers in Ethiopia are not able to use land as collateral for accessing loans. This was felt more deeply by the farmers of Chefe Donsa and Harbu than those of Ejere, due to the fact that it has not been easy for them to access loans from the commercial bank to support their agricultural operations.

The Ejere farmers mentioned a conflict that exists at household level between the use of modern crop varieties and the cultivation of landraces. External factors such as market access, extension services and technology (seeds and inputs), are always triggering farmers to find a strategic balance in allocating their land for modern varieties and landraces, considering the potential risk of rain-fed farming systems, particularly in high production environment situations. This is not the case in Harbu, which represents a more drought-prone marginal environment. Some other conflicting situations involving land allocation that can arise as potential threats for using land for crop production and livestock farming are the eucalyptus plantations in the highlands, and the increased use of farm machinery, which can promote monoculture instead of the maintenance of diverse crops and varieties.

Although farmers in Ejere and Chefe Donsa were facilitated in linking with markets in the bigger cities, and for supplying grain to pasta companies, such efforts were suspended. In Ejere, the markets have been inducing the farmers to consistently supply an increasing volume of a suitable variety, and this may result in potential harm to the crop diversity of that community. In Chefe Donsa, owing to internal conflicts in the cooperatives, such promotions of crops by the markets were halted, whereas in Harbu, such efforts have so far not been attempted. However, in all the sites, the community expressed the difficulties in accessing financial resources, rural infrastructures, roads, transport systems and market opportunities.



## 12. Governance and CBM

In all the sites, the ways that decision-making is carried out are more or less similar. All the cooperatives are led by a *General Assembly*, which is concerned with decisions related to the goals and principles of the cooperative. The agendas are first discussed among the appropriate sub-committees and are addressed in the executive committee. Critical points are put forward for decision-making in the General Assembly. This process seems to be a very participative and decentralized way of managing the cooperative. All members of the cooperative (directly) and the community (indirectly) participate in the decision-making process. This collectiveness seems to be very strong and has been fully appropriated by the cooperative body. Looking at the history of the sites, it is clear that the cooperative policies were continuously enhanced during the *Derg* (socialist) period. The cooperatives have a clear mandate to prepare and submit their annual plan to the district government cooperative office for the provision of technical support and for monitoring purposes. International programmes, like GEF of the UNDP, have been supporting the efforts of the IBC and continue to do so with EOSA in strengthening technical, financial and institutional aspects of the CBM farming communities. Although there is a high level of collectiveness and governance within the cooperative, from an outsider's perspective, we could see the role EOSA plays in supporting and strengthening the capacity of the cooperative to manage the production of quality seeds for the market, adding value to grain through ensuring a market, and as such the economic empowerment that will contribute to the long term sustainability of community institutions and thereby the conservation efforts.

CBM steps and practices such as community seed banking, PVS, capacity-building and value addition are being implemented with the full involvement of target farmers and other concerned stakeholders. The CSB is fully managed and administered by farmer members. Decisions on the revolving seed, variety selection and the sale of surplus seed, are the responsibility of members and are implemented through the cooperative's management body.

The democratic set-up of the cooperative is helpful for taking innovative and independent decisions, according to the needs of the locality. There are members of the cooperatives who are also members of various other local institutions. *Lellistu Women Farmers' Cooperative*, in Ejere; and *Burkitu Gitu Energy Saving Stove Producing Womens' Association*, in Chefe Donsa, are examples of such initiatives.

In all the sites, the organization of the cooperative is sub-divided into auditory, financial and property-control sub-committees, under the umbrella of the executive committee. The executive committee is democratically elected by the General Assembly, for terms of one to three years, depending on the site. Overall decision-making takes place during the assemblies (occasionally), and is mainly delegated to the executive committee and its sub-committees.

In Ejere, farmers have access to improved varieties of wheat, vegetables and pulses from nearby unions, which indicates the cooperative's autonomy and flexibility for achieving benefits. They are inclined towards accommodating improved varieties as a strategy for diversification. This is an indication not only of their ability to make decisions concerning the conservation of landraces but also shows how the cooperative exercises its autonomy.

The management of the cooperative in Chefe Donsa is more functional and active, as reflected in the arrangement of documents and files and in the maintenance of the community seed bank. The farmers of the Chef Donsa site are conserving a higher number of landraces than the farmers in Ejere. The cooperative consists of more members and has clear plans for increasing the membership as well as raising the amount of revolving seed. It has developed a condition for increasing the membership for the society rather than lending seeds to non-members of the seeds bank. The seed transactions carried out through the CSB of Chefe Donsa were impressive. The farmers are continuing to cultivate local landraces in spite of having access to agriculture research and extension services that promote improved varieties, close to its village. The cooperative has very good support from the district agricultural extension and cooperative services in its conservation and seed production activities.

In Harbu, the farmers are promising, in terms of access to PGRs of sorghum. Unlike the farmers in Ejere and Chefe Donsa, they have been little exposed to the marketing initiatives driven by EOSA. This is because of the dominance of the subsistence system, which is associated with the marginal production environment and the small size of landholdings in this area. However, the farmers in Harbu have had a close relationship with their mentors in EOSA for a long time, owing to their contribution in maintaining sorghum diversity in the country. EOSA seems to have strategic attachment to, and a continuous development plan in place for, this site, as the place is known for drought, poverty and vulnerability.

### 13. Sustainability of CBM

Invariably in all the sites, the farmers are aware of their responsibilities concerning the conservation, use and maintenance of local genetic resources. As in other countries, there are a number of innovative farmers who play an important role in enhancing landraces and promoting the use of a diversity of crops. This is well reflected in Ejere, where the cooperative has adopted local and improved varieties. An increased understanding in how to access the materials; analyze the costs and benefits; account for consumption; ensure seed security; seek opportunities to increase income; and promote the commercialization of seed of local crops and varieties, are expressions and pathways towards sustainability.

The process of enhancing human and social capital, aided by EOSA, allows for a high degree of autonomy and the strengthening of the cooperative and gender equality. The recent strategy to promote seed production entrepreneurship for economic empowerment is a key to future sustainability, provided that they have an adequate understanding of the production and marketing sides. It is pertinent to indicate that value addition and the identification of niche markets for promoting local varieties with traits of high culinary and nutritional values, as well as packaged seed, is needed for stable production. Based on our observations and discussions with the community in each site, we feel that the farmers have more socially than economically empowered. Economic empowerment needs to be further strengthened for the long-term sustainability of CBM. In parallel, the strategy to promote more genetic variability, in particular in very fragile production environments, like Harbu, shows a distinct way of ensuring the adaptability of crops and food security. This insight gives sustainability to the crops but needs a high degree of commitment.

There is a great potential for promoting organic/agro-ecological production, which could be linked to organizing organic and fair-trade markets. These pathways could provide insights into enhancing the value of cooperative/community products and ensuring the sustainability of the cooperative in the long run. Some of the marketing initiatives in Ejere and Chefe Donsa, which were halted, shall be reviewed for refinement and improvement. These initiatives could be helpful for encouraging younger generations to continue with farming, as this would be a remunerative option, rather than just mere farming.

Alarmingly, in all the sites, the elders we met during the discussions indicated that their children would be more successful than them in terms of accessing better education, jobs and quality of life. This indicates that the sustainability of CBM depends on meeting the expectations of the farmers without compromising the core principles of the CBM. That is the challenge for the days to come. It is also necessary to improve different strategies, such as public policies, long-term financial support for cooperatives, easy access to credit for farmers, value addition to the products of small farmers – seeds, grain, vegetables, handicrafts - and capacity-building to enhance rural but non-agricultural services. The possibility to provide and generate income in rural areas, so that the younger generation will want to continue with agriculture and that these young farmers will be better educated, is one farmer's wish in the site of Harbu.

## 14. CBM and genetic resource policies in Ethiopia

Ethiopian national policies pertaining to plant genetic resources and CBM are examined in this chapter.

The *National Seed Industry Policy* (1992) recognizes the accelerated genetic erosion of crop landraces due to the promotion of exotic varieties and suggests a balanced strategy in conservation and seed production and supply (Articles 3.07 & 7.01) be considered. This policy recognizes farmers' participation in the seed industry for promoting the sustainable use of local plant varieties, and also emphasizes farmers' rights to share the benefits arising from the use of local varieties they have developed over generations.

The *Ethiopian Constitution* (1995) (Constitution of the Federal Democratic Republic of Ethiopia) emphasizes that the government and citizens have the duty to protect the country's natural resources. Citizens have the right to benefit from the country's legacy of natural resources and the right to participate in the formulation of national development policies and programmes (Art.89).

The *Access to Genetic Resources and Community Knowledge, and Community Rights Proclamation* (2006) aims to ensure that the state and community share the benefits arising from the use of genetic resources, in a fair and equitable manner. It recognizes the contribution of the community in genetic resources conservation and the right of the community to participate and share benefits from the use of their knowledge and resources.

The *Environmental Policy* (1997) aims to promote sustainable social and economic development through the management of natural, human, cultural and environmental resources. The Ethiopian Environmental Protection Authority (EPA) looks at all these issues and serves as a focal point for issues related to the Convention on Biological Diversity (CBD).

The *National Policy on Biodiversity Conservation and Research* (1998) aims to ensure sustainable conservation and management of plants, animals and microbial genetic resources. This policy promotes community participation, recognizing community knowledge and their ownership as well as the sharing of benefits.

Both the Environmental Policy and the National Policy on Biodiversity Conservation and Research recognize community rights to own and use biodiversity resources, as well as their rights to share benefits derived from such use, and to participate in planning and decision-making in the conservation and use of these resources.

The protection of farmers' and the communities' traditional knowledge is recognized in all relevant policies, which aim to ensure that farmers decide on access to, and use of their knowledge, combined with the right to equitably share benefits arising from the use of such knowledge.

A recent Proclamation on Access to Genetic Resources and Community Knowledge and Community Rights, as well as a Proclamation on Plant Breeder's Rights, are seen as progressive steps taken to address issues of community and farmers' rights. It is anticipated that clarification of this and other

aspects may be achieved when the rules and regulations for these proclamations are adopted and implemented.

The *Plant Breeders' Rights Proclamation* (2006) encourages the development of new varieties, and recognizes the contribution of farmers in the conservation and use of genetic resources, as a basis for crop improvement. This Proclamation upholds farmers' rights to save, use, multiply, exchange and sell farm-saved seed of protected varieties, although they are not allowed to sell seed that has been protected with plant breeders' rights. Despite the fact that this proclamation provides for farmers' rights in a separate article, the provisions are limited to the conditions under which farmers can use protected varieties. There is no mention of supporting and recognizing farmers for the role they play in conserving and developing crop genetic diversity, or of how their rights to share benefits derived from the use of their varieties are ensured.

It is clear that Ethiopia has made efforts to protect the interests of the community through genetic resource policies that aid in promoting CBM in the country. But there are noticeable gaps in the proclamations including the lack of a clear definition of farmers and communities, as well as a lack of clarity regarding the role of farmers within the local community structures in Ethiopia. The result is a weak emphasis on both the role that farmers play in crop genetic resources conservation and development, and their rights to be rewarded for the contributions they make in maintaining and developing plant genetic resources for food and agriculture. These gaps necessarily require careful examination and treatment when adopting implementation rules and regulations.

Although policies like those relating to seed, plant breeders' rights, access and community rights, biodiversity and the environment, all address farmers' and community rights, the details of these policies are little known amongst most farmers, even those who are active in the CBM activities. However, even though they may not know the genetic resources policies and their rights at national and global levels, some of them have a basic understanding of how these policies relate to their livelihoods, through the legal empowerment processes facilitated by EOSA.

References for policy issues are the following:

- Abeba Tadesse Gebreselassie, 2009. Material sharing agreements on Teff and Veronia – Ethiopian Plant Genetic Resources. *Journal of Politics and Law* 2 (4).
- FAO, 1996. Ethiopia Country Report, FAO International Technical Conference on Plant Genetic resources (Leipzig, 1996). Plant Genetic Resources Centre, Addis Ababa, 1995.
- GTZ, not dated. Access and benefit sharing in (ABS) Africa. Cases of bio prospecting and ABS legislation in Eastern and Southern Africa. GTZ, Eschborn.
- Jonathan McKee, 2007. Ethiopia Environmental Profile. EC Delegation, Addis Ababa.
- Regassa Feyissa, 2006. Farmers' Rights in Ethiopia: A case study. GTZ The Fridtjof Nansen Institute report 7.
- United Nations University, 2008. Access to genetic resources in Africa. Analysing ABS Policy Development in four African Countries. United Nations University, Tokyo.

## 15. CBM and farmers' rights

Ethiopia has been an active supporter of farmers' rights ever since the mid 1980s when the concept of farmers' rights began to emerge. Since then, it has played a significant role in all the negotiation processes related to farmers' rights and access to genetic resources. A particular mention should be made of the work of the Plant Genetic Resources Centre/ Ethiopia (PGRC/E), later known as the Biodiversity Conservation Institute, through its former Director, Dr. Melaku Worede, and his successors. Ethiopia has also significantly contributed to the development of African Model Legislation for the protection of the rights of local communities, farmers and breeders, and for the regulation of access to biological resources.

The *National Seed Industry Policy* of Ethiopia (1992) recognizes the active participation of farmers in the seed industry for the promotion of the sustainable use of local cultivars. According to Seed Proclamation No.2006/2000 farmers can produce and sell certified seed to other farmers, but cannot engage in large-scale seed sale without being certified by the National Seed Agency (Art. 3).

The *National Policy on Biodiversity Conservation and Research* (1998) ensures the sustainable conservation and management of the country's plant, animal, microbial genetic resources and essential ecosystems (section 2, 1998). The policy emphasizes: community participation in decision-making on biodiversity conservation, development and utilization activities; the creation of community-based systems that recognize community rights to biodiversity resource ownership and use; the fostering of indigenous knowledge and methods relevant to the conservation, development and sustainable use of biological diversity; and the sharing of benefits accrued as a result of the use of indigenous knowledge and germplasm, within the community.

The *Plant Breeders' Rights Proclamation* (Proclamation No. 481/2006) was developed to encourage plant breeders by offering economic rewards as incentives for their contributions in the agricultural sector, realizing that the utilization of new plant varieties developed through research play a significant role in improving agricultural production and productivity. The Proclamation also recognizes the contributions of local farmers in the conservation and use of genetic resources that constitute the basis for breeding new varieties for agricultural production (Art. 27).

According to Article 28, the inclusion of farmers' rights in the Plant Breeders' Rights Proclamation is more concerned with the conditions under which farmers are to be allowed to use protected varieties. Farmers can save, use, multiply and sell protected varieties but not as certified seed. The role that farmers play in conserving and developing plant genetic resources constitutes the basis of breeding, and rewarding them for what they are doing, and will continue to do, is not mentioned.

The scope of the application of this Proclamation is to be specified in directives to be issued by the Ministry of Agriculture and Rural Development (Art. 3 on the scope of application). Similarly, the Ministry may revise, from time to time, as necessary, the list of plant genera and species to which this Proclamation applies (Art.3.2). This may provide room for developing mechanisms through which farmers' varieties are recognized and protected, aimed at enabling benefit-sharing among farmers from the use of such varieties.

The *Access to Genetic Resources and Community Knowledge, and Community Rights Proclamation (Proclamation No. 482/2006)* is to ensure that the state and communities obtain fair and equitable shares from the benefits arising from the use of genetic resources. The Proclamation recognizes the contributions of communities in genetic resources conservation, their right to participate in relevant decision-making, and the right to share benefits derived from the use of their knowledge and the resources in their care.

Accordingly, the Institute of Biodiversity Conservation and Research (IBCR), established by *Proclamation No. 120/1998* has been designated by the state to decide on and facilitate access to genetic resources and community knowledge. Recently, the name was changed to the Institute of Biodiversity Conservation (IBC). Communities, however, have the right to obtain prior informed consent on access to genetic resources when this may affect their socio-economic life or their natural or cultural heritage (Proclamation 482/2006, Art.7.1c-d). Communities may even demand restriction or withdrawal of access agreements entered into by the IBC.

Similarly, the recently approved *Proclamation to Protect Breeders' Rights (No. 481/2006)* provides farmers with the following rights: to save, use, exchange and sell farm-saved seed of their own varieties; to use protected varieties, including genebank materials, for developing new farmers' varieties; and to save, use, multiply, exchange and sell farm-saved seed of protected varieties. But the Proclamation restricts farmers from selling farm-saved seeds of protected varieties on a large scale and as certified seed, unless licensed (Art.31).

Awareness on the issues of farmers' rights is limited to circles of a few individuals and institutions that are involved in international negotiations. Similarly, although policies like those relating to seed, plant breeders' rights, access and community rights, biodiversity and environment all address farmers' and community rights, the details of these policies are not known to most local farmers. Protection of farmers' and community traditional knowledge is recognized in all relevant policies. Farmers and communities have the right to decide on access to and use of their traditional knowledge, including the right to share benefits derived from the use of this knowledge. The farmers of the CBM sites believe that they have all the rights to conserve, use, share and sell the genetic resources of their habitats. The CBM processes have empowered them to firm up their commitments to exercise their rights. EOSA, through training and capacity-building processes, encourages farmers and their associations to exercise their rights thereby protecting and encouraging the customary use of genetic resources, which is relevant to the conservation and sustainable use of the genetic resources of the country. Although the policy environment is conducive to implementing community and farmers' rights in Ethiopia, there is a need to study the nature of community structures as well as relevant policies thoroughly, in order to avoid unnecessary gaps and overlaps that may hamper the implementation of customary and community rights.

## 16. Relation between customary rights and custodianship

In Ethiopia, any proclamations and policies, or customary rules relating to the use of genetic resources were not identified by us. Farmers are entitled to conserve, use and grow crop varieties according to their own interests. Although policies recognize farmers' participation in decision-making processes, a formal arrangement is lacking. EOSA, as an organization, is committed to safeguarding the rights of the seed and food sovereignty of the communities. The organization encourages and supports the Guardians and Custodians of crop genetic resources. Ethiopian customary practices are linked to the conservation of plant genetic resources, and are embedded in their life. They derive food, fuel, fodder, and thatching materials from their resources. Their lives are intimately interwoven with their natural resource habitats. Over time, customary norms and traditions related to the access to and use of local resources evolved within the communities. Consequently, the communities have safeguarded innumerable landraces of crops through selection, based on their choice and preferences.

A community, conservation oriented NGO like EOSA is enabling farming communities to sustain and promote the conservation and sustainable use of local resources, and helping them to exercise their customary rights. Such efforts are vital for ensuring local food security and food sovereignty. In the cooperatives promoted by EOSA, selected farmers of the executive committee, whom the team had a chance to meet, expressed their awareness of the importance of crop genetic resources conservation; customary rights of the community to use germplasm; issues related to accessing those resources, and so on.

As yet, no legal tools have been created for protecting or guaranteeing those rights, but it is expected that such tools will be developed with the enactment of laws to implement the 2006 Proclamations on Plant Breeders' Rights, and on Access to Genetic Resources and Community Knowledge and Community Rights. Important progress has been made in developing policy frameworks to address the rights of communities, farmers and breeders at national level. However, the pace at which farmers' rights are being implemented in Ethiopia has not been as significant as demonstrated during its articulation and participation in discussions at regional and global levels. Regardless of all these policy commitments made to address farmers' and community rights, the process of formulating legal instruments for the implementation of policies at national level has been very slow.

As in Nepal, the team in Ethiopia realized there is a need for rules and regulatory mechanisms, and governmental support systems, like the Protection of Plant Varieties and Farmers' Rights Act in India; the Biodiversity Act, also in India; and the Access and Benefit-sharing Decree, in Brazil. These legal instruments are essential for enabling custodian farmers to exercise their customary rights.

Concerns of the farming community include: control over their produce; the right to save and exchange seed in accordance with the customary practices; the right to benefit from the use by others of their traditional knowledge and experience; land tenure insecurity, due to state ownership; claims for compensation over the use of genetic resources; security of tenure on the lands they farm or occupy; the right to have equal social security such as credit and collateral for loans; water supply; health centres; schools and infrastructure, like roads; access to proper markets and to technology; and being consulted on decisions that directly affect them. These concerns of the farming communities should be addressed by the implementation of those policies that have been developed, but not fully and effectively implemented, in Ethiopia.



## 17. CBM and access and benefit-sharing over genetic resources

The National Seed Industry Policy (National Seed Industry Policy, section.3.07, 1992) and the Environmental Policy (section 3.3.j, 1997), as well as the National Policy on Biodiversity Conservation and Research Policies recognize the rights of farmers and communities to share benefits accrued as a result of the use of their knowledge and resources.

The Proclamation on Access to Genetic Resources and Community Knowledge, and Community Rights provides communities with the right to 50% of the share that the state obtains in monetary form from the use of genetic resources (Art. 9.2). The money obtained in this form is channelled to services of common advantage to the concerned local communities, as will be specified by a regulation to be issued under this Proclamation. The portion of monetary benefit left after deducting the community share shall be allocated by the state for the conservation of biodiversity and promotion of community knowledge (Article 18). Non-monetary benefits arising from the same are to be shared between the state and the concerned communities as specified in each access agreement, and based on the kinds of benefits agreed to be shared with the access permit-holder (Article 18.3).

Some access agreements were made prior to the approval of the Proclamation on Access to Genetic Resources and Community Knowledge, and Community Rights. One of these is the Agreement on Access to, and Benefit Sharing from Teff Genetic Resources, between IBC and the Ethiopian Agricultural Research Organization (EARO) on the Ethiopian side, and Health and Performance Food International (HPFI) of the Netherlands. The agreement, which was concluded in December 2004, concerning access to teff germplasm, was new for the country, in terms of formalized arrangements of access to genetic resources and benefit-sharing that recognizes farmers' rights. As a starting point for formal access and benefit-sharing arrangements, useful lessons were expected from the process, particularly with regard to the treatment of benefit-sharing arising from the use of uncultivated plant genetic resources.

Unlike India, which has established documentation and validation mechanisms (people's biodiversity registers); grassroots institutions (biodiversity management committees); regulatory mechanisms, like the Plants Variety Registry of the National Protection of Plant Variety and Farmers' Rights Authority (PPVFRA); the National Biodiversity Authority; state biodiversity boards, following the development of the Biodiversity Act; a treasury for accessing benefits arising out of the use of the genetic resources and associated knowledge (the National Gene Fund and the National Biodiversity Fund); such mechanisms have not yet been formed in Ethiopia. Likewise, a clear structure for addressing access issues, such as a decision-making body on genetic resources; prior informed consent; and material transfer agreements; such as the Access and Benefit Sharing Decree that was implemented in Brazil, is not yet in place in Ethiopia. There are many similarities between Ethiopia and Nepal regarding the national priority to implement an access and benefit-sharing regime. Unlike Ethiopia, the ABS bill is still pending in Nepal owing to political circumstances. As a signatory of the CBD, Ethiopia appears to be moving forwards in this direction without compromising the customary rights of the community and sovereignty of the country.

## 18. CBM, empowerment and *in situ* conservation

The team noticed that CBM is being practiced in similar ways in all the study sites visited. The same steps were taken from the very beginning, such as raising awareness; organizing the community; enhancing knowledge and skills; participatory landrace enhancement; seed multiplication and institutional development through seed banking and networking. Based on our observations, these steps can be considered as part of the CBM methodology in Ethiopia.

CSB cooperatives are at the centre of CBM activities in all the sites. Through these CSB cooperatives, seed collection, participatory selection, seed multiplication, access to credit and marketing, capacity-building, value addition and networking within groups and stakeholders, have been addressed with the facilitation of EOSA. Due to the limitations of time, we were not able to interact with the National Genebank authority, or with agricultural research centres and other I/NGOs working in agriculture and agrobiodiversity management. However, there is a positive understanding of CBM in government extension offices, and they support it indirectly. In analyzing the contribution being made by CBM to on-farm conservation of crop genetic resources, its greatest role was obvious to us: to revive, maintain and utilize the durum wheat and sorghum landraces in their original production environment. Both Ejere and Chefe Donsa are in potentially high production areas for wheat, which were covered by modern varieties when local landraces were lost during the 1980s.

Due to CBM interventions, there is now a high demand for landraces even though they are less productive (1.5 tons/ha). This is due to the increasing realization of their usefulness and mostly high quality traits, as well as their adaptation potential and low input requirements. Modern varieties are high yielding (4 tons/ha) and dominated cultivation in both sites. Farmers now grow landraces side by side in an average land-size of half a hectare. Particularly in Chefe Donsa, which is more marginal than Ejere, the membership of the CSB is increasing every year so that they can access durum wheat and legume crops. In Harbu, the community diversity of sorghum landrace populations has increased to 67 following CBM interventions. Sorghum diversity was almost lost during late 1980s. Farmers are enjoying the diversity by planting mixtures of sorghum populations of the same maturity groups. In the CSBs across the sites, after each harvest, farmers deposit the seed of their local varieties in the bank for next year as security. There is an increasing realization of the importance of growing many varieties and landraces, thereby spreading risk, increasing resources in terms of soil fertility, and reducing production costs. Landraces allow the farmers to adapt to changing conditions, and to maintain their cultural and culinary practices. In all three sites, there is a linkage between CBM practices, empowerment and the role of CBM in promoting the conservation of particular crop diversity on-farm. Growing demands for seed of local varieties of wheat and sorghum has also been noticed. The CSBs have plans to increase the volume of seed production for the market. In addition, they aim to add value by selling produce as their own brand, providing economic benefit to the custodian farmers.

Here in Ethiopia, it is clear that CBM evolved because of the realization of how it would benefit the community and through joint learning of farmers and scientists working on agrobiodiversity conservation. The reintroduction of displaced landraces on-farm; participatory research on their adaptation; maintenance of local varieties and landraces in the CSB; seed multiplication; and the establishment of farmers' institutions (CBOs) to maintain this dynamic process, have direct and positive implications on the *in situ* conservation of traditional wheat and sorghum varieties.

## 19. General synthesis

- The CBM team had a good experience during the visit in Ethiopia. We had opportunity to interact with experts like Dr. Melaku Worede, Mr. Hailu Getu and Dr. Regassa Feyissa, and the knowledgeable stakeholders of the communities in the CBM sites. The insights received from the interactions with them, and the observations made in the field, have been captured in the report after triangulation with the field experts. The team also wishes to highlight the limitations of the study in terms of time and language, as well as the limited access to visit all stakeholders involved in the CBM processes.
- Ethiopia is a pioneer country in piloting CBM practices. It is evident from the historical CBM processes that communities have struggled because of natural calamities, particularly drought, pests and diseases, in various part of the country. Overtime, the traditional customary systems like culinary practices, seed exchange and seed storage mechanisms, have saved the country with the support and able guidance of indigenous expertise. Participatory decision-making processes have been the coping mechanisms of the communities for a long time.
- The team had the impression that the package and practices facilitated by EOSA, and the inception of the processes, are same across all the sites visited. Although the CBM activities are similar in all the sites, the level of empowerment varied in many respects.
- It is vital to mention here that the country has faced the loss of landraces due to environmental factors like drought, pests and diseases. Down through the years, Ethiopians have continued to use traditional foods and beverages made from local landraces of crops. Therefore, food culture and agro-ecological diversity is a key reason for sustaining the interest of communities to ensure the conservation and use of local varieties on a larger scale across the country.
- The CBM processes of one and half decades of work, in all the sites, have adequately motivated the communities to participate collectively. The team felt that efforts towards creating economic incentives in conservation would further strengthen the communities to be actively involved in the CBM processes. Attempts in this direction would attract more youth in the CBM processes.
- Customary beliefs and norms are obstacles preventing women from participating freely in the decisions-making processes, as is the case in many societies. The Ethiopian context is not exceptional in this respect. The team understood that there is a need for more opportunities/space for women to participate in the decision-making processes in the public sphere, like in the cooperatives. The team understood the efforts made by EOSA to capacitate several women in the communities who are knowledgeable, eloquent and resourceful.
- The team of indigenous expertise conceptualized and developed the methodology of CBM and implemented it with the support of like-minded international donors. The team worked hard to implement CBM and achieve its mission of seed security, food sovereignty and food security for the community across the country.
- The community has a cursory understanding of access and benefit-sharing of germplasm. The nation has formulated necessary policies for safeguarding the genetic resources, which have helped the communities exercise their community rights associated with the resources. The functional mechanisms/implementation pathways for ABS are not clear in national policies.
- On the outset, the CBM empowerment processes and practices adopted by the communities in the Ejere, Chefe Donsa and Harbu regions of Ethiopia would certainly assist and safeguard them in an era of climate change and provide resilience to protect and sustain them in the long run.

## ANNEXES

### Annex 1: Integrated Agro-Biodiversity Management and Seed Security Programme

The key objectives of the programme are to:

- Promote community-based management and enhancement of agrobiodiversity.
- Strengthen local seed supply systems in order to ensure seed security at community level.
- Promote market and non-market incentives to improve the socio-economic gains for the farming communities.
- Minimize the conflicts between the need to introduce new agricultural technologies and the need to maintain and enhance traditional technologies and crop varieties while the natural resource base is sustainably managed and used.

This programme is based on the understanding that the management of agrobiodiversity and increasing agricultural productivity require integrated multi-sectoral efforts. EOSA is working towards bringing together farmers, researchers, food processors and consumers, in order to ensure sustainable production through enhanced social and economic incentives, particularly for local farmers. EOSA also attempts to increase food security and improve local farmers' livelihoods, by developing and enhancing indigenous crop varieties, thereby diversifying and broadening the options of planting materials for local farmers. The first phase of the project was supported by GEF (2002) and after phasing out of the GEF project, EOSA has been maintaining the programme through support from USC-Canada, and since 2006, with the full support of the Community Biodiversity Development and Conservation Programme (CBDC). CBDC is a regional African programme involving Ethiopia, Zimbabwe, Malawi, Mali, Sierra Leone, Burkina Faso, Lesotho and Zambia; and is supported by the Development Fund (DF) of Norway; SwedBio of Sweden; and Hivos/Oxfam, of the Netherlands.

EOSA tactically follows the farmer-centred approach whereby farmers' decisions, objectives and needs play the lead in initiating programme activities. On-farm conservation of indigenous crop varieties is carried out in such a way that conservation complements production by providing options and sources of adapted planting materials. Decentralized and participatory varietal development is the basic strategy followed for developing varieties that fit into different agro-ecological conditions and meet farmers' needs and objectives. The programme capitalizes on the complementarities between the need for introducing new agricultural technologies and that of maintaining and enhancing traditional crop varieties and technologies, and ensuring food sovereignty. The ability of farmers to train other communities to launch similar CBM initiatives could also be taken as empowerment for the Ejere community. The reintroduction of displaced landraces on-farm; research on their adaptation; maintenance in the community seed bank; seed multiplication of enhanced forms; and support of farmers' institutions to maintain this dynamic process, have had direct and positive implications for *in situ* conservation of the targeted traditional wheat varieties. Especially the presence of a CSB in the village, which currently functions as a CBO, strongly supports the *in situ* conservation of PGR. The farming community is more interested in traditional crops/varieties for a number of reasons, including: (a) their adaptation to adverse environmental conditions; (b) their ability to give optimum yield with little or no inputs; (c) their support to household or community level seed security; (d) their socio-cultural significance; (e) their desirable nutritional values, specially tastes; and (f) their use as straw for cattle feed.

## Annex 2: Activities and plan for the study

- Coach and discuss the terms of reference (ToRs), in the presence of Walter de Boef, in order to understand and share roles and responsibilities.
- Identify the key relevant questions to facilitate discussions with the communities and stakeholders in each topic.
- Discuss and finalize questions before moving to the field sites/community groups.
- Carry out field visits and discussions (community and local stakeholders).
- Carry out a consultation with Walter following the initial two visits, on progress and initial ideas concerning outcomes of the exchange study.
- Hold discussions with national experts of government and non government organizations.
- Draft documentation on the process and outcomes and its synthesis (daily).
- Produce and submit a synthesis report.

### Annex 3: Roles and responsibilities of CBM study team in Ethiopia

	Topic	ToRs Document section	Responsibility	
			Lead	Support
Cluster 1	Site characterization: CBM components and practices	Section 1	Kumar	Sergio, Oliver EOSA
	Diversity for sites: impact on empowerment	Section 2:1	Kumar	Sergio, EOSA
Cluster 2	Historical drivers for empowerment	Section 2:2	Bharat	Sergio, EOSA
	Cultural drivers for empowerment	Section 2:3	Bharat	Kumar, EOSA
	Drivers for empowerment	Section 2:4	Bharat	Kumar, EOSA
	Definition of empowerment	Section 2:5	Bharat	All
	Competing claims: land ownership, CBM and empowerment	Section 2:8	Bharat	Kumar, EOSA
	CBM, empowerment and <i>in situ</i> conservation	Section 2:15	Bharat	All
Cluster 3	Community within the term CBM: is this collective management	Section 2:6	Sergio	Oliver, EOSA
	Inclusion/equality and gender	Section 2:7	Sergio	Oliver, EOSA
	Governance and CBM	Section 2:9	Sergio	Oliver, EOSA
	Sustainability of CBM	Section 2:10	Sergio	Oliver, EOSA
Cluster 4	CBM and genetic resource policies	Section 2:11	Oliver	Bharat, EOSA
	CBM and farmers' rights	Section 2:12	Oliver	Bharat, EOSA
	Relation between customary rights and custodianship	Section 2:13	Oliver	Bharat, EOSA
	CBM and access and benefit-sharing over genetic resources	Section 2:14	Oliver	Bharat, EOSA
Cluster 5	General synthesis	Section 2:16	All	
Team leader	Overall compilation and reporting to Global CBM		Oliver	All

EOSA (host institution) personnel and CBM experts provided technical and managerial support to the team. The following persons made their contributions.

- Mr. Genene Gezu
- Mr. Samson Gashu
- Mr. Temesgen Desalegn
- Dr. Bayush Tsegaye
- Dr. Awegechew Teshome
- Dr. Regassa Feyissa
- Dr. Melaku Worede
- Mr. Hailu Getu