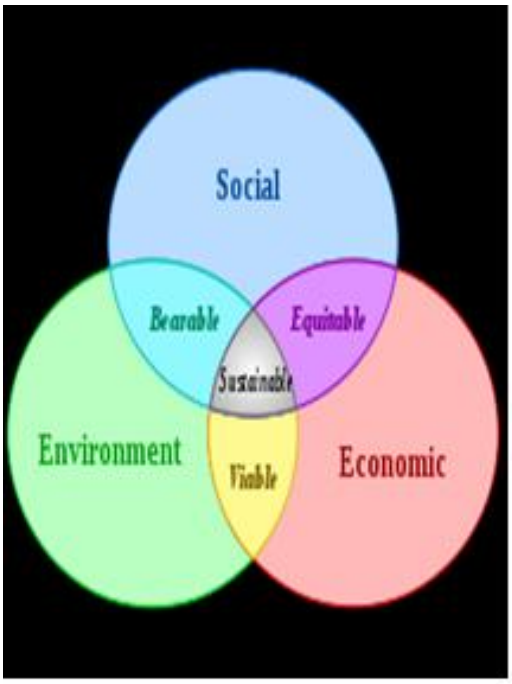
TRAINING PACKAGE ON BIOPHYSICAL GULLY CONTROL AND REHABLITATION MEASURES

PART THREE: TECHNICAL MANUAL ON SUSTAINABILITY OF GULLY BIOPHYSICAL CONSERVATION MEASURES



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Ministry of Agriculture

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MODULE 20: SUSTAINABILITY OF GULLY BIOPHYSICAL CONSERVATION MEASURES

20.1 What is sustainable developement?

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. In life: it is just as saying that "*Don't spend more than you earn!*" and in business "*Don't spend your capital*" In general: it is just to mean "*Don't behave as if there is no tomorrow!*"

It is noted that this requires the reconciliation of environmental, social and economic demands - the "*three pillars*" of sustainability. This view has been expressed as an illustration using three overlapping ellipses indicating that the three pillars of sustainability are not mutually exclusive and can be mutually reinforcing.
a) Economic benefits:– an increase in land value and demand for labor, substantial increase in crop and livestock production and an increase in fodder, grass and fuel production, an increase in the diversity of crops grown and improvements in livelihood security through the diversification of livelihood sources.
b) Social benefits:– solidarity and cohesiveness, assistance and cooperation among community members, etc.
c) Environmental benefits:- such as recharge of ground water and increased supply of drinking and irrigation water, increased number of trees, and reduced soil erosion or flood and salinity.

"Sustainability is about stabilizing the currently disruptive relationship between the earth's two most complex systems:- human cultures and the living world."

The ecological (ecosystem health) approach to sustainable development

The ecosystem health approach to sustainable development implies measurement within two broadly defined categories. The first includes measures of the "pressures" placed on ecosystems by human activities (material and energy extraction, physical restructuring, pollutant emissions, human appropriation of space and ecosystem productivity, etc.). These pressures are often the cause of reduced ecosystem health as manifested in degraded service flows and/or reduced management options. The second category includes measures of the responses of ecosystems to these human pressures. Central to the ecological view of sustainable development is the notion that economic and social systems are sub-systems of the global environment. Development, from the ecological viewpoint, is seen to refer to the ''capacity of [an ecosystem] to respond positively to change and opportunity'' or the ''maintenance of [ecosystems] dynamic capacity to respond. The key property to be sustained then is the capacity of ecosystems to respond with resilience to external perturbations and changes. A strong current idea within the ecological viewpoint is the notion that the ''health'' of ecosystems must be protected and enhanced if they are to exhibit the resilience that is necessary for sustainability.

Concept of sustainability

The concept of sustainability is used here in a narrow sense to refer to the likelihood that there will be maintenance and protection of assets created by the SLM program after the government and/or donor support ends. As noted elsewhere, the benefits of the program are:- i) increased crop and livestock productivity; ii) agricultural surplus and higher farm household incomes; iii) sustainable future agricultural production due to improved soil and water management; iv) increased fuel wood supply; and v) enhanced capital resources resulting from improved economic and social infrastructure (e.g. rural access roads). Attempt has also been made to identify and select development components on the basis of assessment of local needs and development priorities.

- Development should be free from environmental degradation, poverty and depletion of the natural resource base. The concept of development and progress are often used in a positive sense to indicate the processes of advancement of individual or of collective phenomena or of object or action or a nation.
- Today there is a large agreement on the fact that *human beings are at the centre of development* and that economic growth is a means to an end, i.e. human development. Very recently it is understood (alone with economics) as social and human development as well.
- Human development is the expansion of people's freedoms to *live long, healthy and creative lives;* to advance other goals they have reason to value; and to engage actively in shaping development equitably and sustainably on a shared planet.
- People are both beneficiaries and drivers of human development, as individuals and in groups. Therefore, development is the sum total of *economic growth (GDP)* plus *human development* plus *social change*.
- The basic objective of development is to create an enabling environment for people to live long, healthy and creative lives.

Principles of sustainable development

The principles of Sustainable Development includes, but not limited to, the following

- Anticipating and preventing problems than trying to react and fix after they occur;
- Accounting all long-term environmental and economic costs, not just those of the current ones only;
- Best decisions are those based on sound, accurate, and up-to-date information;
- Live for the interest of our environment and not destroying its capital base;
- Quality of social and economic development that must take precedence over quantity;
- Everyone sharing responsibility for suitability for a sustainable society and
- Respecting nature and the rights of future generations.

What does sustainable development means for SLMP?

Land rehabilitated under the program does not degrade again in the mid to long term but will yield higher agricultural outputs in a sustainable manner. For that integration of biophysical measures, establishment of functional byelaws, introduction of use concept/management plans, use of value chain approach for agricultural products in rehabilitated areas etc could be mentioned as the main interventions that highly contribute for sustainability of rehabilitated gullies.

Policy support to sustainability

Conservation and rehabilitation policies and programs in the country have to balance environmental protection and human welfare if they have to effectively arrest environmental degradation and rehabilitate the degraded resource base. Tenure insecurity decreases the concern of farmers for future improvement of their lands and makes them to focus only on maximizing of short-term gains/benefits. Thus, the concern for environmental protection and improvements of human welfare should be balanced. In this connection the Amhara national regional government has recently issued a proclamation that help to protect the environment with full participation of watershed communities. The proclamation would be an impetus to reinforce the implementation of byelaws in legalized watershed associations.

20.2 Use concept/management plans for sustainability of a rehabilitated gully

Introduction

It is important to highly emphasize on the importance of use concept/management plans, maintenance and management of rehabilitated gullies, selection of technology for gully control measures and community organization and other related issues in broad when one think of sustainability of soil and water conservation (SWC) measures for watersheds in general and gullies in particular. Many of the concerns related to resource depletion and environmental degradation is reflected in the concept of sustainable development. It is stated that: "Humanity has the ability to make development sustainable. Meaning it can make development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The main issue here is to analyse and understand the current implications of development and see consequences from the perspective of its future effect.

Challenges to maintain and manage a rehabilitated gully

Once the preventive measures failed for some reason, control measures should come immediately to rehabilitate the gully area. This in turn will lead to another idea that taking control measures is one thing but how to enclose the area so that measures taken can be permanently protected and regeneration of vegetation can be enhanced is the other key issue.

As the study in Tigray indicated, the community there does not have its own community-based organization (whether traditional or modern) that is responsible for and capable of managing and maintaining SWC (soil and water conservation) activities independent of the government. Among the factors that contribute to sustainable management and maintenance of SWC activities is land certification. Currently, land certificates are issued to individual farmers in Tigray. The study shows provision of land certificates has positive implications in the sustainability of SWC measures including gully control measures. Farmers also believe that private ownership motivate both *short –term and long-term investment* more than public ownership. The study has also shown problems observed in the land use proclamation as follows.

a) Land cannot be transferred to descendents who have their own landholding or other means of living if the possessor is deceased even if the land owned by descendants' can be inadequate to sustain their livelihood.
b) Farmers fear the land developed for many years could be redistributed and given to other farmers without any compensation. This is one of the issues that discourage the possessors to make long-term investment on the land. As discovered from the study, the majority of the farmers do not support land redistribution because the existing landholding is small. This shows farmers need land tenure security.
c) While every farmer has the obligation to conserve, maintain and protect his/her own land and land of the commons (Tigray Government Proclamation No.23/1997), there is no strict mechanism to enforcing of the regulation when the farmers fail to do so.

Maintenance of gully control structures is a very important point worth to be emphasized. Treated gullies should be identified and the boundaries should be clearly demarcated, the gully rehabilitation process should be checked regularly and the healing process monitored closely. Structures built in the gully for stabilization purpose should be observed for damage especially during rainy seasons and after heavy storms. Damaged check-dams should be repaired immediately to avoid further damage and eventual collapse. Preventive measures need to be applied timely to reduce soil erosion adequately. As repeatedly mentioned by many people, keeping out grazing and browsing animals from vulnerable places are a very

important management rule. It is a precondition when aiming at efficient and effective recovery of the environment in a relatively short period of time.

Factors to consider for sustainability of a rehabilitated gully

For a rehabilitated gully to have long lasting effect on the livelihoods of villagers it should fulfil the interest of the community in three ways- economically, environmentally and socially. There are many different factors affecting the sustainability of rehabilitated gullies. The major ones are:- a)Level of participation of the community and establishment of byelaw that helps to empower the community, b)Selection of the area to be treated and technology to be applied, c)Nature of the gully etc. Regarding community participation and byelaws the following are important to mention. These are participation of the community in:

- planning, implementation and monitoring stages of watershed development;
- rehabilitation and maintenance of rehabilitated gullies;
- free labour contribution;
- provision of equal opportunities of participation to males and females at all levels;
- formulation of byelaws and establishment of legalized community institutions;
- linking the gully management system with accepted and community owned cultural and traditional management systems; and
- the use of a rehabilitated land for income generation and aesthetic activities etc.

Technically the SWC technologies discussed in relation to gully control measures are not always successful. Applicability and effectiveness will strongly depend upon the type of gully and specific circumstances, which have to be very well understood. The size of the gully catchment area, the gradient and the length of the gully channel, volume of run-off etc are some of the main criteria for selecting of control measures.

When using physical structures (whether in combination with vegetation or not), correct spacing of these structures is also important. Too much spacing between them will result in undermining their base, leading to potentially high costs of repair and maintenance. As for the position along the gully, in principle, priority should be given to taking measures in the upstream sections, where the chances of success are higher. Once these sections have been treated, it will also be easier to treat the lower sections. Mechanical and biological treatment of a gully may be done gradually, but must take account of the whole watershed from the outset. In summary, the sustainability of the check dam is a function of the following:

- Layout, construction standards, and proper spacing in between the check dams;
- Quality of the construction material and its appropriate mix and others;
- Support structures for check dams such as gully reshaping and retaining wall;
- Integration of physical measures with biological conservation;
- Watershed treatment and performing preventive measures (closing the area from free grazing and others);
- Upgrading/raising of the check dam and fertility improvement (compost making, etc);
- Enhancing farmers' level of participation in site selection, labour contribution during constructions and assuming responsibility for protection and maintenance;
- Formation of user association and bye law development; and
- Income generations from fodder, various crops, vegetables, fruit and other non-timber forest products.

Conservation and protection of closures

Check dams constructed and trees and grasses established in gully must be protected against physical destruction, fire, illegal wood cutting, grazing and any form of encroachment. Closures are considered to be efficient techniques for biomass production, biomass diversity and runoff infiltration and sediment deposition. Closures help SWC through delaying runoff flows and decreasing total run-off volumes at the catchment and

hence reduce hazardous gully erosion. In addition to environmental protection, closures have economic advantages for the community, which include the production of grass, fodder, wooden poles, fruits, firewood as well as habitat for bee keeping. Thus, closures have both conservation and economic advantages for the community. It is when these dual advantages are realized that communities are interested and motivated to conserve, maintain and protect the closures.

Establishment of buffer zones

Area closure can only sustain if there is willingness from the community on its protection. To that end, the community should first be convinced about the benefits of area closures and agree on how to share the benefits (develop use/management plans). A formal written agreement, that includes size and boundaries of the enclosure, tasks and responsibilities of the community, tasks and responsibilities of the government and other stakeholders, modalities of joint management systems, future beneficiaries and how to share benefits/produce etc should be prepared in consultation with the village leaders at the planning stage of area closure. Main activities included are

- The boundaries of the enclosure should be demarcated with visible permanent structure or marks;
- A buffer zone at the periphery of the permanent area closure must be established;
- Fencing can be undertaken as necessary;
- Economically valuable trees may be planted in appropriate free spaces to boost production and increase incomes; and
- People should be allowed to cut and use grass based on agreed rules (byelaws).

The above management interventions are primarily the responsibility of the villagers, with technical advice from extension staff. In order to make enclosures sustainable, the surrounding communities must obtain as much benefits as possible and as early as possible.

Use concept

The other important issue for sustainable gully rehabilitation scheme is the identification of users and development of a use concept or management plan. In most cases, gullies cross different land uses owned by many land users. Therefore, before treatment of gullies, the users should be identified and boundaries should be clearly demarcated, responsibilities of owners in managing, maintaining and utilizing the gully and its produces should be elaborated and agreed upon. Experiences have shown that most of the gully rehabilitation efforts so far were usually made accidentally. It was made without having clear purposes at the inception stage due to lack of management plans or use concepts. As a result, it is not uncommon to see gullies with a huge biomass, mostly of one species (such as *Sesbania sesban or Elephant grass*), that was kept unused. After all, owners were even unknown. This has later driven the community members into conflict and hence destruction of the whole venture.

The use of gully depends on whether it is established with a protected waterway or water diverted and the gully stabilized for other uses. Under the condition when the water is discharged through gully, the side of the gully can be used for growing of grass or fodder. But in conditions when the gully is not used as a waterway, the whole gully bed and other parts can be used for growing horticultural crops such as banana, mango and other fruit trees. Wide gullies can have trees planted on the side slopes provided they are not too steep or they are reshaped.

In view of this fact, the identification of gully owners and demarcation of their boundary, development of a management plan and formulation of user's agreement (on maintenance and proper utilization of the gully) should come *before* any treatment effort. It is always crucial to remember that before deciding to undertake gully control measures one has to

plan first for what purpose that the gully will be used after treatment. It is only then after one can take measures as per the users' plan, which is agreed and relevant to the future strategy.

Major activities undertaken to introduce the use concept/management plan for gullies

Discuss and agree with the community on

- Why do they need to rehabilitate the gully (purpose of rehabilitations) before any gully treatment action;
- The need for identification and demarcation of the whole gully area;
- Area closures of gullies by those who are owners eventually. For how long the area needs to be closed, the need for byelaws and legalizations for administration of closed area etc should be discussed and agreed;
- How to divide the enclosure into blocks/compartments by fire lines. Undesirable dead and dried bushes, twigs and branches can be removed. It may, otherwise, create a considerable increase in the risk of fire;
- How to define the roles and responsibilities of key stakeholders for effective management of area closure;
- The need to identify appropriate species and prepare quality planting materials (seedlings) for different gully parts;
- Check-dams require regular follow-up and maintenance by group of people sharing the gully area. Due attention should be given for repair and maintenance of check dams especially during and after the rainy season;
- Carrying out soil improvement activities such as application of organic manures or compost for planted seedlings;
- Applying appropriate management practices, which include weeding/removal of unwanted/uneconomic plants, pruning of trees, and protections from free livestock grazing etc;
- Strengthening capacity of the community; and
- Designing and introducing of appropriate strategies to effectively utilize the available resources after the recovery of the natural resources such as
    - Cut-and-carry systems for grass/hay (for their livestock),
    - Collection of fire wood,
    - Collection of fruits (from plantations and/or wild plants) and traditional medicines, and
    - Placement of beehives and undertake apiary activities etc.

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MODULE 21: COMMUNITY MOBLIZATION AND ORGANIZATION

21.1 Introduction

Watershed development is the rational utilization of natural resources such as land, water and environment as a whole for optimum productions in order to fulfil the needs of the present without affecting the future generations. There are many reasons why community participation is essential in our day to day activities especially on watershed development. Studies reveal that, many watershed development projects around the world have performed poorly because they failed to take into account the needs, constraints, and practices of local people and their active participation from designing to implementation stages. Communities are the owners and first hand beneficiaries of development activities in their localities.

There was and there is still huge destruction of natural resources due to:

- Lack of sense of ownership or negligence to communal properties;
- Lawlessness or no agreed byelaws in the communities;
- Low awareness and community participation in development activities;
- Lack of understanding about sustainable utilization of natural resources;
- People wrong understanding that watershed development is the role of government;
- Farmers' know watershed development is not an activity that immediately benefits;
- Soil and water conservation activities compete for farm lands and attract wild beasts that destroy crops;
- Poor diversification of income sources for better livelihoods; and
- Low incomes etc.

Principally that improving the sustainability of watershed management requires not only better technologies and policies for resource use, but also better watershed organizational mechanisms and processes through which stakeholders can come together to make decisions. GTZ-SUN realized this issue and worked vigorously in managing the social aspect of the watershed parallel to the technical support to project implementations, to fill the gaps that were created due to lack of genuine participation of the community.

Tragedy of commons in the natural resources management (NRM)

Communal lands commonly understood as lands that belong to everyone. Any biomass and other resources produced could be used by anyone. Everybody has the right to encroach the natural resources available in communal lands. In general, the responsibility of managing and protecting of resources found in such areas belongs to all communities. It can also be equally translated as "the responsibility of all is the responsibility of none". Lawlessness and negligence of beneficiaries to communal properties are a common phenomenon.

The Tragedy of the Commons is a tragedy because some members of the community destroy much of the naturally endowed resources to satisfy their own personal needs, which as a consequence would affect the communities at large than the individuals alone, who participated in the illicit devastations. The negative effect hurts the communities as a whole in a long term. The following are some examples of tragedy of commons.

Example 1. Livestock versus land carrying capacity

- Herders sharing a common parcel of land have equal rights or are entitled to graze their livestock;
- It is up to individual herder's interest to add more number of livestock s/he acquires into the land, even if it exceeds the carrying capacity of the land. This, in turn, results in temporary or permanent damages for all community members;

- The individual herders receive all the benefits from additional livestock, while the damage on the common resources is shared by the entire community. Hence, the common resources depleted at faster rates or even destroyed to the detriment of all.

Example 2. Life boat ethics

- A lifeboat bearing 50 people with a room for ten more;
- The lifeboat is in an ocean surrounded by a hundred swimmers;
- The *"ethics"* of the situation stem from the dilemma of whether (and under what circumstances) swimmers should be taken aboard the lifeboat. This is exactly the same as the tragedy of commons explained above.

Free access and unrestricted demand for a finite resource ultimately reduces the resource through over-exploitation, temporarily or permanently. Hardin's proposed potential solution to the tragedy of commons

a) Privatization,
b) Polluter pays and
c) Regulation

21.2 Need for community organization guideline

Community organization guideline supports and facilitates the formation of watershed association via guiding of the proper steps, requirements, and roles and responsibilities of practitioners. It serves as a road map on the course of watershed association development. The objective of the social guide line is also to assist experts, DAs, community leaders and watershed practitioners-who organize grass root communities-to establish watershed Associations. It also helps to develop, rehabilitate, manage, and solve local problems of the watershed to sustain the development and enable the local people lead a better life.

The specific reasons why community organization guidelines needed are:

- To successfully establish a strong and formal watershed association, equipped with statutory rights and mandated for natural resource planning, management and utilization at micro-watershed level in a sustainable manner;
- To avail principles that should be taken into account during the preparation and formulation of effective internal byelaws of the watershed associations;
- To encourage restoration of ecological balance through active participation of the communities watershed Association; and
- To encourage local community towards sustained action for the repair and maintenance SWC measures.

21.3 Participation

Participation: - is the process of involving people in projects, policy reviews or ideas to encourage decision-making and empowerment, ownership and influence in services and issues that affect them. Participation of watershed users could be in planning, implementation, and in protection of watersheds. Why community participation is so important? Because it helps to:

- Obtain local and traditional knowledge;
- Minimize conflict ;
- Involve community in the decison making on the design and benefits they get from the project;
- Increase public confidence in the reviewers and decision-makers;
- Provide better transparency and accountability in decision-making; and
- Provide opportunity for those otherwise unrepresented to present their views and values.

Types of participation

***Passive participation*:** - People participate by being told what is going to happen or has already happened. It is a unilateral announcement by an administration or project management without giving any chance to listening to people responses. The information being shared belongs to external professionals only.

Participation in information: - People participate by answering questions posed by extractive researchers using questionnaire surveys or similar approaches; people do not have the opportunity to influence the program under consideration.

Participation by consultation: - People participate by being consulted and external agents listen to their views. These external agents determine both problems and solutions, and may modify these in the light of people's responses. Such a consultative process does not allow any share in decision making, and professionals are under no obligation to take on board people's views.

Participation for material incentives: - People Participate by providing resource for example labor in return for food, cash or other material incentives. Much of SWC activities, on-farm trials, etc falls under this category. In the case of trials for example, farmers provide fields but are not involved in the experimentation or the process for learning. It is very common to see this and yet people have no stake in prolonging activities when the incentives end.

Functional participation: - People participate by forming groups to meet predetermined objectives related to the project, which can involve the development or promotion of externally initiated social organization. Such involvement does not tend to be at early stages of the project cycle or planning, but rather after major decisions have been made. These institutions tend to be dependent on external initiators and facilitators but may become self-dependent with time.

Interactive participation: - People Participate in joint analysis, which leads to action plans and the formation of new local institutions or the strengthening of existing ones. It tends to involve interdisciplinary methodologies that seek multiple perspectives and make use of systematic and structured learning processes. These groups take control over local decisions, and so people have a stake in maintaining structures or practices. *Hence, it is the type that is recommended for the establishment of watershed association.*

Self-mobilization: - People participate by taking initiatives independent of external institutions to change systems. Such self-initiated mobilization and collective action may or may not challenge exhaustive inequitable distributions of wealth and power.

Constitutional right of communities to participate

Participatory watershed development is the participation of communities at all levels of development programmes in the watersheds. Land owners, landless, women…etc have to come together from the start to act as owners of the project. This participation includes the involvement of the communities in planning, implementation, monitoring and protections for sustainability of completed projects. The Federal Democratic Republic of Ethiopia (FDRE) constitution enacted in its articles 43 about communities participation and gives the right for active participation of communities to form associations.

Sociological investigation within the watersheds

Social change refers to an alteration in the social structure of a social group or society; a change in the nature, social institutions, social behaviors' or social relations, aspirations of a society. Social change may be driven by cultural, religious, economic, scientific or technological forces.

21.4 Factors that affect sustainable development on communal and private landholdings

Common-pool resources, as explained above, are generally subject to the problems of congestion (overcrowding), overuse, pollution, and potential destruction unless harvesting or use limits are devised and enforced. The use of many common-pool resources, if managed carefully, can be extended because the resource system forms a positive feedback loop, where the stock variable continually regenerates the fringe variable as long as the stock variable is not compromised, providing an optimum amount of consumption.

Private farm land conservation is relatively weak as compared to the communal. Some of the basic reasons are presented below:

a) Individual farmers do not take or take less initiative to conserve, maintain and protect their own farmland. They rather wait for the public to conserve and maintain their land because that is the usual practice;
b) Food for work (FFW) based conservation activities are done basically on communal lands. Thus, farmers prefer to engage on the FFW activities for their immediate benefits (wheat);
c) Since their land is small and does not produce enough, farmers prefer to engage in off-farm activities especially during the dry season;
d) Farmers believe that stone bund terracing compete their land; and
e) The private farmlands are used for grazing especially during the dry seasons. After harvesting farmers send their livestock to the farmland to graze the stubble and feed the crop residues etc.

21.5 Watershed Association

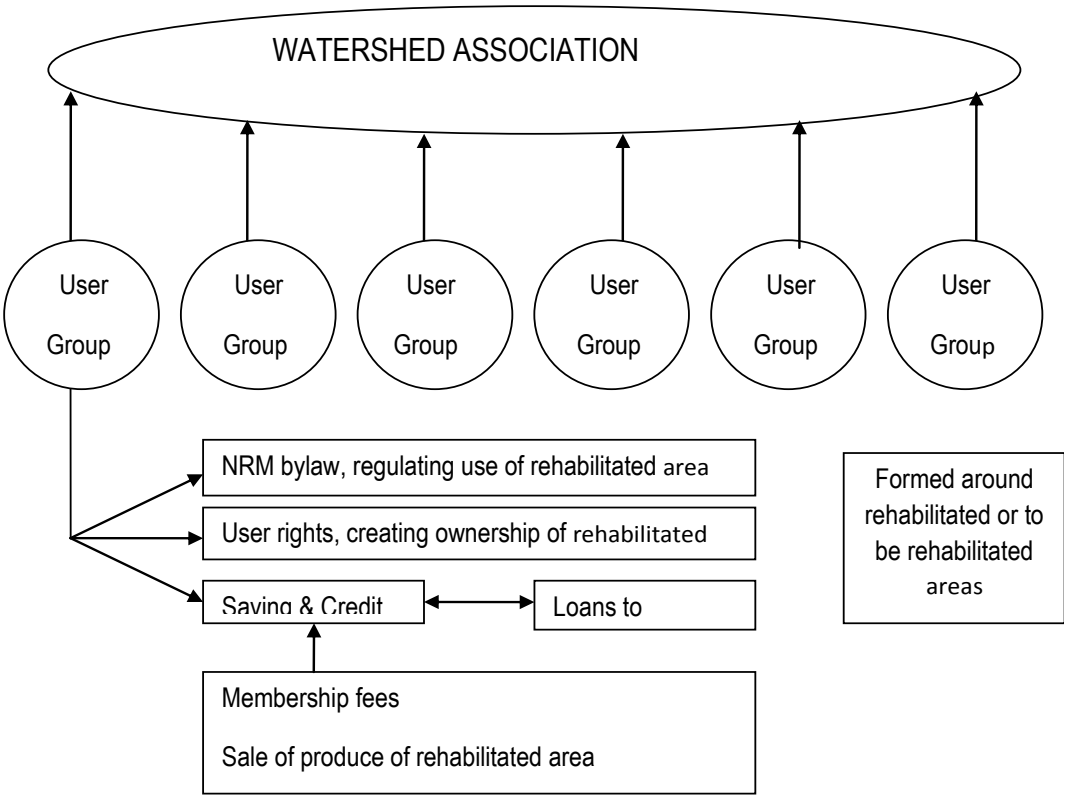
Why institutionalization of the watershed communities is necessary? Because

- They are actual and first hand beneficiaries;
- They have high interest than anyone in the kebele for the micro watershed development. Thus, they can actively participate, if the necessary institutional and legal frameworks exist;
- The watershed users' association can facilitate the day to day participation of all users' in the development activities;
- Management and protection of the communal properties can be handled by the users' organisation in a sustainable manner;
- The kebele administration or the Edir can help in the development activities but they have no full time and interest for the watershed development as that of the users' organisation.

What is users' association?

An association is a grouping formed between two or more persons with a view to obtaining a result other than securing or sharing of profits. (Ethiopian civil code Art. 404). Watershed users, therefore, have the civil code right to get organized into an association (figure 2)

Figure 1. Watershed and group formations arrangement



Source: GIZ-SLM (Leake G/Libanos)

Eight "design principles" of stable local common pool resource management

- Clearly defined boundaries (effective exclusion of external un-entitled parties);
- Rules appropriation and provision of common resources adapted to local conditions;
- Collective-choice arrangements allow most resource appropriators to participate in the decision-making process;
- Effective monitoring by monitors who are part of or accountable to the appropriators
- There is a scale of graduated sanctions for resource appropriators who violate community rules;
- The self-determination of the community is recognized by higher-level authorities;
- Mechanisms of conflict resolution are cheap and of easy access; and
- In the case of larger common-pool resources (CPR): organization in the form of multiple layers of nested enterprises established, with small local CPRs at the base level.

Ethiopian Federal Democratic Republic (EFDR) constitution about association

Article 31 *Freedom of Association:* Every person has the right or freedom of association for any cause or purpose. Organizations formed, in violation of appropriate laws, or to illegally subvert the constitutional order, or which promote such activities are prohibited.

Byelaw-users' agreement, statute, convention, etc

An association byelaw means a set of rules governing the internal organization of the grouping. It is different from law in that byelaw is a regulation passed by a non-sovereign body, which derives its authority from a governing body. In the case of watershed associations, the general assembly is mandated to pass and adopt the byelaw.

Successes observed after users' associations established (SUN Experience)

Sustainable utilization of natural resources (SUN) for improved food security was a predecessor of the current SLM program. This program has been operating in eight woredas of the region. It was financed by the German bilateral development program via KFW and operated in those woredas of the region from 2006 to 2011. During this period, out of 25 micro-watersheds of SUN Amhara program, 20 of them were made to have users' legalized watershed associations with enforceable byelaws. Due to this effort the following results were recorded.

- Significant reduction in the destruction of natural resources (NR);
- Offenders who destroy NR are no more left for free;
- Significant reduction of negligence towards communal properties;
- Easy recognition of felt needs of the community watershed association and works to solve the problems of the group in its local context;
- Conflicts observed among community members were only healthy conflicts due to:
    - Fines on offenders according to the agreed byelaw and
    - Weak committee members replaced by strong ones.
- Development of positive attitudes of farmers' towards natural resources protection.

21.6 Principles in establishment of legal watershed association

Byelaws and byelaw development: Byelaws, being internal laws or subsidiary laws that are enacted by the local government, should recognize many sources of rules, such as like statutory law, international treaties, customary laws, religious laws; local norms etc., Byelaws must adhere to certain principles and integrate to supportive laws in the area where they are expected to operate. The following points should be considered during byelaw drafting:-

- Byelaws must not conflict with the existing constitution, laws and regulations in any of their words, sentences or phrases;
- Byelaws must be coherent with the statutory and that of the customary laws;
- Byelaw must be clearly stated and avoid sentences that are open to misinterpretation/challenges in the court;
- Byelaw must be drafted by the micro-watershed community executive committee;
- Byelaw must be discussed and adopted thoroughly by the general assembly of the watershed;
- Byelaw must be signed at least by 2/3rd of community members in the initial general assembly meeting. Later the remaining members i.e. those who were absent in the first meeting, must be briefed and invited for signature;
- Amendment on byelaw can be forwarded by the committee or some other members (the byelaw itself must determine the procedures of amendment); and
- Amendment on byelaw can be finally approved by the general assembly of the association.

21.7 Legal personality and steps for developing legal watershed association

What is legal personality?

Legal personality refers to the ability of an organization to enter into legal transactions such as holding property, entering into contract, debt and other legal obligations, to sue or to be sued for the interest of its members, to open bank account,…etc. Generally speaking legal status gives that organization to act any legal cases in front of law and other executive agencies. Some examples of legal persons include:-Associations, Companies, Cooperatives (co-ops), Corporations, Estates, Municipalities, Natural persons, Partnership, Political parties, Temples (in some legal systems, have separate legal personality), Trade unions,

Churches and religious denominations etc. Legal status gives that organization to act any legal cases in front of law and other executive agencies.

What are the steps for legal watershed association?

Step one: - Briefing and awareness creation at regional level

The very first task is to create awareness to government institutions at all levels. Government institutions, which have a linkage to the watershed association (BOLEP, EPLAUA, BOWR, Justice Office, Cooperative promotion office and others) should be consulted for common understandings by the BoARD. The natural resource management focal person takes the lead role in mainstreaming and debriefing at the regional and zonal levels.

Step two: - Briefing and awareness creation at woreda level

The woreda NR expert should manage and facilitate the watershed association development task with the consent and communication of the justice and administration offices. The expert shall work with the DAs, community watershed team, kebeles on the various preparatory activities for the formation of associations. In this regarded it should be noted that the role of the DAs is mainly facilitation of the similar tasks with the PAs, watershed associations by making use of already established communication with the woreda NRM office.

Step three: - Briefing and awareness creation at Keble level

At this point the DAs are very much important to disseminate the information within their respective Kebele administration, so that awareness of the decision making body at grass root levels will be raised. However, the formal contribution from the woreda administration and the woreda NR focal person still remains crucial to create the understanding. So, it remains always important and essential to clearly aware the entire existing structure of the regulatory agencies, justice and administration offices.

Step four: - Briefing and awareness creation at watershed (community) level

This discussion and briefings should focus on the necessity of community participation as an introduction. After the introductory briefing, the discussion may go further detail focussing on the previous achievements in natural resources (NR) development in that area and asses the trend up to the present situation. This task may take 2-4 meetings depending on the situations, clarifying and defining the term watershed, and existing problems of the watershed, some success stories of watershed associations, and brain storming on the general issues of development and community benefits from well managed ecosystem/watershed. These discussions should be geared towards the objective realities on the ground by reflecting the current NR disturbances, existing trends of the management of the communal properties, the side effects of lawlessness/lack of byelaw/ and the level of community participation in that locality. It should also address other related topics like the necessity of regulating use of NRs, such as rehabilitated and communal areas, the importance of communal work to rehabilitate degraded areas, the importance of soil and water conservation measures on private land and other possibilities for economic development.

The above introductory topic will lead definitely to a very important agenda. That is, ***what can be done to reverse mismanagement of the resources and the uncoordinated conservation practices in the area to minimize the negligent attitude of the community?*** This question and the answers collected will be the corner stone for the whole community organisation issues. Adequate time (days) should be given to answer this question and reach on possible solution that can solve the identified problems.

Step five: - Association formations

This can be established during the byelaw adoption meeting. After repeated meeting and exhaustive discussion of the step 4, the community will come to realize the problem and set common vision and goals to come together to avert the watershed problem. Following the creation of common vision, watershed association can be formed within the micro watershed by the users themselves. To form the association the committee members can be considered as founders and they may initiate the issue. The micro watershed community must reach consensus for common decision and understanding on the:-

- Need for a separate users institution, i.e. association;
- Need for users agreement (byelaw) on NRM, utilization and protection and
- Establishment of legal association to solve the problems of watersheds

This is also supported by the civil code of Ethiopia; from Article 404-482 enacted all the issues in regard to formation and legalization of an association. Where an association is a grouping formed between two or more persons with a view to obtaining a result other than securing/sharing profits (art.404).

The organizational structure of a given association is determined by its objectives, even though this may vary from one association to the others. The common organs of an association can be:

- The general assembly composed of all members and act as the supreme decision maker
- The executive committee implements the decisions of the general assembly. The executive committee post holders include the chairman, the secretary etc.

Step six: - Byelaw development

Under this step it is believed that the communities are aware on their watershed resources, and have identified utilization and management mechanisms including the importance of common agreed rules to regulate open access and destructive attitudes. The narratives under this step summarizes that what byelaw is for the community, the basic principles of byelaw development, expected content of the watershed association byelaw, and how to draft byelaw in a participatory approach and the final adoption stage of their internal regulation.

Contents of the byelaw of watershed associations

Watershed association byelaws vary widely from organization to organization and the type of resource to be managed. Bye law is the means to maintain community coherence, when it is simple and understandable. Bye-law may be classified into two major parts. These are:-

i. Part One - *Organizational rules*
ii. Part Two - *Natural resources use agreement*

i) Organizational Rules of the watershed association: - Organizational rules deals mainly with the internal organizational matters, working procedures, election procedures, leadership and others. For instance territory or limits of the association, objectives of the association, membership/eligibility criteria of the association, election procedures used, power-obligation-rights and responsibilities of the executive members, the general assembly, the chairman and secretary and ordinary members plus other sub-committees. How meetings will be conducted are also among the issues.

ii) Natural Resource Utilization and Management (NRM) Agreement (byelaw): - The NRM and utilization byelaw encompasses various agreements that can assist to manage and utilize natural resources by giving due attentions to the ecological, economical and social factors. The agreement revolves around:

- ✓ Utilization of deadwood and live woods, non-woody vegetation, grazing lands, farmlands, etc;

- ✓ Organization of collective work schemes on farmlands and communal lands;
- ✓ Land clearing and fire management;
- ✓ Maintenance of structures and plants introduced for watershed development;
- ✓ Controlled/zero grazing as well as wild life/forest management;
- ✓ Use of the scarce water resources including ponds, rivers etc.

Drafting and approving a byelaw

As a matter of principle, byelaw must be drafted and adopted by the members themselves. No one can do this job except the communities themselves. If it is done by others, it will not be a byelaw of the community but rather a law imposed upon the community. Community visioning and planning process revealed that when byelaws were formulated without the participation of local community, farmers won't be interested or satisfied with the implementation of the byelaws. This in turn leads to the continuation of degradation of NR and poor adoption of NRM technologies.

As farmers are mostly with low education levels, and some even illiterate, it is difficult for executive committee members to come up with a comprehensive draft byelaw, which encompasses the whole issues mentioned above.

Therefore, it is basically very important to support farmers in the development of byelaws using a model byelaw. Basically, the woreda expert(s) and the watershed committee chairman should be sensitized on the framework byelaw before assisting the local community. The watershed team or committee must get enough time to draft the byelaw. Sometimes, the process needs months and it is advisable not to force them to finish quickly as it will affect the contents of the draft byelaw. But this does not mean that they have to take unnecessary time for drafting byelaws.

After drafting the byelaw it should be clear that the members should be consulted and discuss on the constitution in a participatory manner before going to the next step. It is also worthy that the committee sit with woreda Agriculture Office expert(s) and justice office prosecutor to discuss on the draft before adopting by the general assembly.

Byelaw adoption process

It is adopted in the general assembly meeting where the woreda NR expert, the DAs and the chairman of the watershed committee took the lead role to organize the meeting in the presence the legal expert from the justice office.

The draft byelaw should be presented to the general assembly where all users sit for a decision. From experience, at least one meeting day, without adding any other agenda points, must be reserved for this discussion and later adoption. In this meeting:-

- The watershed committee chairman must lead the meeting. DA's, expert…etc should not try to substitute him. This is the first time that the chairman begins to exercise his position;
- The draft byelaw should be read article by article to the members;
- The chairman should invite all members to come up with suggestions, question, support or opposition to the articles;
- Articles voted for changes must be registered and changed accordingly;
- The chairman must encourage all and give free and fair chance to all users in the whole adoption process;
- After exhaustive discussions, the chairman must ask for a vote;
- At least 2/3 of the participants must accept the draft for adoption. Otherwise, the byelaw will stay as a draft till it fulfils all concerns raised by the participants; and
- Adoption of the draft byelaw and formation of the association can be accomplished at the same time in the same general assembly.

Byelaws execution

Monitoring will help raise awareness among local decision makers about the interdependencies of SWC measures and actions taken to manage and protect the resources. If such an activity is carried out collectively, the effort can easily enhance sense of ownership, skills, confidence and credibility.

Watershed indicators are used to track changes on the quality and quantity of resources over time and to observe whether the conditions are improving or not. The indicators here can be categorized under the *social* and *biophysical* aspects of the watershed. The social aspects tell us about the attitudinal changes and users' perceptions, the livelihood improvements and the overall impacts of watershed development associations. The biophysical aspect deals with all the site information on the rehabilitation work. All indicators like reduction of runoff, soil erosion, and availability of fodder, vegetation cover and others which are the results of the site specific watershed development measures. Watershed development measures can be listed and evaluated in a participatory manner through various ways.

Executive committee meeting

This body is responsible for the day to day implementation of the byelaw and decisions of the general assembly. The meetings conducted by this committee must focus on the byelaw articles execution, watershed management activities, and others. As the watershed committee is to provide oversight and guidance for the association, the committee have several functions depending on their constitutions.

General assembly meetings

This organ is the supreme decision making body of the watershed association. Most watershed association agreed to conduct general assembly meeting on quarterly basis. The priority agenda points of the general assembly should be to hear and to discuss the past four month's performance report of the committee.

The general assembly meeting aims to cover the whole aspects in line with performance of the association, the drawbacks, problems, and other concerns through discussions and continuous interaction. It keeps truck of the progress made in line with set objectives of the association and rectifies deviations.

Training/capacity building

Training has a pivotal role to make watershed associations efficient in technical skills and manage their resources. Based on the local circumstances, training can be given on topics such as participatory approaches and leadership, simple participatory monitoring and evaluation methods, byelaw development, watershed planning and resource management, income generation activities, record keeping system and financial affairs, and on other internal management systems. These and other related training activities should be conducted by the woreda experts and DAs of the ARDO for the watershed association, management committee, women and other user groups in the watershed. Training can be delivered before and after the establishment of community organizations to enhance the participation and awareness of the community. DAs should get frequent and appropriate training on how to manage and strengthen the watershed associations through follow up and continuous assistance.

Legal personality

Legalization of community watershed teams (CWT‟s) and natural resource utilization (NRU) agreements (which means recognition by formal courts) are vital for the CWTs to fully exercise their mandates and discharge responsibilities. Community byelaws are important tools for protection, proper utilization and management of common resources.

Requirements for the legal personality

In law, there are natural as well as artificial persons. The latter concept refers to organizations, associations, ministries, business enterprises, cooperatives and even the government itself. Any such organization obtains the legal personality status only through official recognitions. Claiming the legal personality status for a watershed association requires the submission of a set of six documents to the Woreda Justice Office. These documents are:-

- 5 copies of the **byelaw (**users' agreement) signed by all users,
- 5 copies of the filled and signed form of "**Memorandum of understanding**",
- 5 copies of the filled and signed form of "**Founding members minutes**",
- One filled form of "**Founding member's biography**" or CV, with 2 passport size **photos** for each founding member,
- A **support letter** from the Kebele administration, and
- A **support letter** from the Woreda Office of ARD (Agriculture and Rural Development).

This process would require all founding members to travel from the watershed to the woreda capital for signatures. However, fortunately, it could also be managed by inviting the concerned officials to the watershed sites to attend the provision of signature by members. As a matter chance, the Justice office working procedure, (the woreda justice office) – who is responsible for providing legal personality certificate - usually sends legal experts (prosecutors) to observe the general assembly meeting in the adoption process of the byelaw. This legal expert can also have a task to investigate the draft byelaw, i.e. its alignment with all government laws and regulations, and provide corrections as and when necessary. After the general assembly meeting and adoption of the byelaw by 2/3rd of the users', and the fulfilments of all the aforementioned steps, there comes a stage to request for legal personality certificate.

Step seven: - Request for legal personality

As a continuation of the process, this step is the final step of building independent watershed association which is certified by legal office through the fulfilment of different requirements mentioned above. It should be noted that claiming the legal personality status for a watershed association requires the submission of six documents to the Woreda Justice Office as mentioned before.

The role of partners' and GIZ in the development, management and protection of watersheds (WS)

The detail duties and responsibilities of supportive organs such as churches, schools, mosques, Edirs etc should be agreed in the byelaw of the watershed. It has been explained that byelaw, as a principle, should be consistent with the customary rights and existing social structures in the community. In the same manner association can be effective by working together with the traditional and customary institutions like Edir, Kire, Yelam ras and etc. To begin with, it is the intention of the community organization and their byelaws to take into consideration the traditional values, customary rights, and traditional public experiences for the watershed development. Hence, every watershed development task is required to recognize and make use of the indigenous knowledge and the customary roles that the supportive organs can play. Unlike the state laws, byelaws emerge from the community and are adoptive, flexible norms and rules governing the behaviour of the community. So, it is very much important to making the proper interface between the formal and that of the informal laws that exists within the community.

The role of GTZ-SLM on the watershed association development

- ✓ Awareness creation and sensitization;
- ✓ Documentation of proven practices/experiences;
- ✓ Draft watershed association and institutionalization of guidelines;
- ✓ Advise and provide technical assistance to partners;
- ✓ Conduct exposure visits and trainings ;
- ✓ Support/actively participate on the gap identification and capacity building;
- ✓ Provide some inputs like farm implement, hand tools, improved seeds, and nursery materials and construction materials to watershed community through established mechanisms. It helps to avoid dependencies; and
- ✓ Closely work with stakeholders on watershed association formation and institutionalization tasks.

21.8 User Groups

The watershed user group (WUG) is responsible for regulating sustainable use of natural resources by developing and implementing a natural resource management (NRM) byelaw, which governs the natural resources in the area where it is formulated. Creating the watershed user group should be done with the community in question since they are the ones who implement and obey for NRM bylaw.

These user groups can be organized with the participation of the woreda watershed team (WWT). Especially the NRM expert, the Cooperative expert and the Marketing and Input expert are important members. With the support of these people discussions can be held with the community watershed team (CWT).

Rehabilitated site user groups

The currently developed approach of organizing small groups of farmers around rehabilitated gullies, hillsides or communal lands seems the best way to ensure better sustainability. The farmers are organized on the basis of social linkages and are normally living adjacent to the rehabilitated areas. Consequently, along with obtaining of user rights, a natural resource management byelaw is signed. Under these conditions farmers benefit better from resources generated (as explained above), which in turn increases sustainability and ownership sense for watersheds.

Zero/controlled grazing user group

Zero/controlled grazing is part and parcel of watershed management, where livestock's are prohibited to graze or allowed only in a controlled manner. Quick review of the Tigray experience outlines that the grazing management systems and organization of the beneficiaries requires:

- Skills in the community facilitation and awareness creation;
- Identification of suitable areas and appropriate communities;
- Equitable share of communal forage among the members; and
- Setting clear guidelines (byelaws) that resolve user right disputes etc.

It is envisaged that this experience can be adapted and implemented in different regions. Experience has shown that adoption of zero/controlled grazing requires demonstration of the management and awareness creation through experience sharing visits for the target community. It is also important in the first place to create awareness at the regional level to get the good will of higher level officials.

21.9 Issues that should not be forgotten for sustainability of watersheds

Sustainability can be ensured in watersheds through:

Active community participation

Active community participation is one of the key ingredients of an empowered community. But community participation is far more than a requirement; it is a condition for success. Studies have documented that those communities that are highly engaged in the work of community development could raise more resources, achieve more results, and develop in a more holistic manner. Community participation, then, is critical to community success.

Increase in income and livelihood improvement

The low level of income and poor living condition of the community limits participation levels in SWC activities. On the other hand, the ever increasing degradation and depletion of soil, water and plants negatively affects the livelihood of the community. Thus, the community has to conserve these NR in such a way that it provides production and/or generates income sufficient to sustain their daily lives without compromising the long term benefits.

Balance between the economic and environmental benefits

It is obvious that the community can mitigate the deteriorating situation of the renewable natural resources. However, the productivity of these resources is not yet adequate to secure the community's livelihood and sustain the environment. This means that the economic and environmental benefits from the SWC activities are still inadequate. Thus, *the rate of replenishment due to SWC activities has to match the rate of economic loss due to less return from productions*. Therefore, if the people in the villages are to continue with the community based SWC activities, they have to achieve tangible net benefits in terms of production and income as well as environmental improvements. The motivation of the individual farmer to conserve his/her farmland depends on the amount of benefit he/she earns in return due to the fact that s/he possesses a small amount of land at only marginal production level, The obligation of the landless farmers to participate without any benefit in return is somehow impossible and it also needs due attention. Hence, there should be *clear links between local actions and reasonable benefits in return for the actions taken.*

Creation of an institution of watershed users

Active and willing involvement of the community associated with SWC measures and organized effort to manage these measures is vitally important. A sustained change is likely to appear when the communities have power, responsibility, and sense of ownership and when they are committed. Thus, the village communities should have their own community-based organization independent from the government structure responsible for and capable of managing SWC works in the villages. The role of the government and the role of the community organizations should be clearly defined. This also minimizes the dependency of the community on the government, which should play a supportive and capacitating role rather than a paternal role. People must understand and believe that it is their own efforts that could bring development. They must feel that they themselves are contributing the maximum of their own labour, finance and material resources and, that assistance from the outside (if at all necessary) is only for something which they cannot afford.

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MODULE 22: VALUE CHAINS DEVELOPMENT

22.1 Introduction

Agro-industrial products offer much better prospects of growth than primary commodities. The marked trend to break down production processes into specific tasks opens up new opportunities for developing countries to specialize and take a more profitable part in global trade provided they meet increasingly stringent market requirements. Traditionally, little attention has been paid to the value chains by which agricultural products reach final consumers and to the intrinsic potential of such chains to generate value added products and employment opportunities. The income gained as a result of value addition and employment opportunities created would contribute to the sustainability of natural resources management (NRM) either directly or indirectly.

It is against this background that donors, non-governmental organizations (NGOs) and others are recognizing that the traditional agricultural assistance to projects that concentrated on building up of farmers' production capabilities are no longer sufficient to ensure sustainable income growth. There is now an increasing understanding that production support activities must be linked to market demand and that production activities must be looked at within the context of the whole supply chain and the linkages, or business relations, within that chain. Thus, concepts such as "*Linking Producers to Markets*" or "*Linking Farmers with Markets*" are very much in vogue. However, while the underlying ideas of those working with farmers may now be more realistic, little will be achieved unless the approach adopted is also realistic. In particular, organizations must be prepared to adopt a much more commercial approach than hitherto, employing staff with a strong understanding of marketing and of the functioning of the private sector.

Participation in value chains implies both opportunities and pitfalls for developing countries. The prospect that lead firms such as brand owners, innovators and system integrators may increase shares of rent and, therefore, further widen the gap is very real. Another danger is that small and medium enterprises (including farmers) will face insurmountable difficulties as international supermarkets, retailers and buyers govern the access to markets by setting up food safety and quality standards that impose a substantial cost of compliance. Since subordinate firms are standard-takers, their bargaining power is reduced and so are their shares of rent. Furthermore, value chains may increase the risk of marginalization faced by areas with poor infrastructure and small farms since chain development may favour larger farms and processing plants which can invest in infrastructure and increase their production capacity.

In order to participate successfully in sustainable agro-value chains, developing countries must cope with numerous challenges and constraints posed by a continuously changing marketplace. Most noteworthy among these challenges are the intense competition due to the globalization of economies and the liberalization of markets; the impact that the governance of international supermarkets, retailers and buyers has on access to markets; the growing demand for high-quality, organic, minimally processed products and the emphasis on traceability and social responsibility; and the increasing risk of marginalization faced by areas with poor infrastructure and small farms.

The concept and definition of value chain development

Value chain is a **concept** which can be simply described as the entire range of activities required to bring a product from the initial input-supply stage, through various phases of production, to its final market destinations. The production stages entail a combination of physical transformation and the participation of various producers and services, and the chain includes the product's disposal after use. As opposed to the traditional exclusive focus

on production, the concept stresses on the importance of value addition at each stage, thereby treating production as just one of the several value-adding components of the chain. In sum, the concept of value chain provides a useful framework to understand the production, transformation and distribution of a commodity or group of commodities. With its emphasis on the coordination of the various stages of a value chain, value chain analysis attempts to unravel the organization and performance of a commodity system. The issues of coordination are especially important in agricultural value chains, where coordination is affected by several factors that may influence product characteristics, especially quality.

A value chain is the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final customers, and final disposal after use. It incorporates a range of activities within each phase, including both input supply and output marketing systems. Typical value chain linkages include input supply, production, assembly, transport, storage, processing, wholesaling, retailing, and utilization, with exportation included as a major stage for products destined for international markets. A product moves in the value chain from one chain actor to another and in the process add some value; for example, flow of seed to farmers and grain to the market occurs along chains from producer to intermediary to consumer.

Actors can be defined from both innovation system perspective and value chain aspect. From value chain point of view, chain actors are those involved in producing, processing, trading or consuming a particular agricultural product. They include actors which are directly and commercially involved in the chain (input suppliers, producers, traders, processors, transporters, wholesalers, retailers and final consumers). Indirect actors are those which provide financial or non-financial support services, such as bankers and credit agencies, business service providers, government, researchers and extensionists.

Value chain is also a set of interdependent organizations, and associated institutions, resources, actors and activities involved in input supply, production, processing, and distribution of a commodity. In other words, a value chain can be viewed as a set of actors and activities, and organizations and the rules governing those activities. Value chains are also the conduits through which finance (revenues, credit, and working capital) move from consumers to producers; technologies are disseminated among producers, traders, processors and transporters; and information on customer demand preferences are transmitted from consumers to producers and processors and other service providers.

Value chain concept entails the addition of value as the product progresses from input suppliers to producers to consumers. A value chain, therefore, incorporates productive transformation and value addition at each stage of the value chain. At each stage in the value chain, the product changes hands through chain actors, transaction costs are incurred, and generally, some form of value is added. Value addition results from diverse activities including bulking, cleaning, grading, packaging, transporting, storing and processing. A value chain can be the way in which a firm develops competitive advantages and creates shareholder value. It can also demonstrate the interrelation and dynamic relation between individual businesses. A narrow economic-based definition of value chains involves identifying the serious of value-generating activities performed by an organization. A broader system approach looks activities implemented by various actors, from primary producers, harvesters, processors, traders, service providers, and upstream suppliers to the down-stream customers.

22.2 Important levels of value chain

Value chains can be classified into two based on the governance structures: *buyer-driven* value chains, and *producer-driven* value chains. *Buyer-driven* chains are usually labour

intensive industries, and so more important in international development and agriculture. In such industries, buyers undertake the lead coordination activities and influence product specifications. In *producer-driven* value chains, which are more capital intensive, key producers in the chain, usually controlling key technologies, influence product specifications and play the lead role in coordinating the various links. Some chains may involve both producer- and buyer-driven governance.

There are three important levels of value chain
• *Value chain actors***:** The chain of actors who directly deal with the products, i.e. produce, process, trade and own them.
• *Value chain supporters*: The services provided by various actors who never directly deal with the product, but whose services add value to the product.
• *Value chain influencers:* The regulatory framework, policies, infrastructures, etc.

22.3 Business development services (BDS) and co-ordinations in value chain development

Value chain requires an enabling environment which include infrastructure, effective governance of input and output markets, and a supportive policy and fiscal framework for science, technology, legal, advisory, and trade issues. Most developing countries lack an optimum enabling environment and must choose among the many options to improve it. A business development service is closely related to the concept of value chains. These are services that play supporting role to enhance the operation of the different stages of the value chain and the chain as a whole. In order for farmers to engage effectively in markets, they need to develop marketing skills and receive support from service providers who have better understanding of the markets, whether domestic or international. Local business support services are, therefore, essential for the development and efficient performance of value chains.

The performance of an agricultural value chain depends on how well the actors in the value chain are organized and coordinated, and on how well the chain is supported by business development services (BDS). Verticality in value chains implies that conditions at one stage in the value chain are likely to be strongly influenced by conditions in other stages in the vertical chain, in a direct and indirect ways, and in expected and unexpected ways. It should be noted that intra-chain linkages are mostly of a two-way nature. A particular stage in a value chain may affect and be affected by the stage before or after it. Coordination refers to the harmonization of the functions of a value chain—its conduct. The result of good coordination between the stages of a value chain may be reflected in a good match between buyer preferences and seller supplies. That is, better coordination in a value chain results in better matching of demand and supply between the chain stages, resulting in efficient and low-cost exchange, quality maintenance, and value addition

22.4 The agricultural value chain analysis, its purpose and benefits

In a value chain marketing system, farmers are linked to the needs of consumers, working closely with suppliers and processors to produce the specific goods required by consumers. Using this approach, and through continuous innovation and feedback between different stages along the value chain, the farmer's market power and profitability can be enhanced. Rather than focusing profits on one or two links, players at all levels of the value chain can benefit. Well functioning value chains are said to be more efficient in bringing products to consumers and therefore all actors, including small-scale producers and poor consumers, should benefit from value chain development. Communication is in both directions. It is important that both consumers and processors are made aware of factors limiting production, just as much as farmers and other producers are made aware of consumer requirements. Poor information flow in these complex systems, and other obstacles, often

prevent farmers from entering into markets, or reduce the benefits they can obtain from entry.

Given the complexities of agro-value chains and the fact that they are embedded in broader relationships (regulatory and policy framework, chain governance, social and cultural environments, market globalization, rapid progress and application of technologies, etc.), their analysis is an indispensable task prior to any intervention. Designing value chain interventions to benefit vulnerable groups poses a considerable challenge for development organizations. Value-chain initiatives are designed to overcome some of these obstacles and often to mobilise the knowledge and resources of key firms, such as retailers, to improve the opportunities and benefits of market entry for producers and providers of inputs and services. Especially the capacities of chain actors should be improved for jointly developing skills, share knowledge, know-how and information. This is basic for nurturing a trust-based relationship that creates win-win situations for all involved actors. *Trust* and *transparency* are often seen as the key elements for successful value chains.

Value chain analyses encompass issues such as organizational, coordination, power relationship between actors, linkages, and governance aspects. The value chain approach has been a very useful analytical tool for taking a more objective look at on an organizations position in a market. It allows for examining the consequence of empowering one group (the producer) and identifying how to link them to importers and consumers. It enables analysis of the implication of who does what, at which stage in the chain, and what this means for risk, capital needed and margins. It can help also to identify with whom to form partnership in the chain.

Agricultural value chain analysis can be viewed as a heuristic device or analytical tool. The research can be descriptive, prescriptive and designed to provide operational guidelines to improve efficiency of vertical coordination. Agricultural value chain analysis systematically maps chain actors and their functions in production, processing, transporting and distribution and sales of a product or products. Through this mapping exercise, structural aspects of the value chain such as characteristics of actors, profit and cost structures, product flows and their destinations, and entry and exit conditions are assessed.

Agricultural value chain analysis focuses on chain governance and the power relationships which determine how value is distributed at the different levels. Through the analysis of systems and power relations at different levels, value chain analysis enables a more comprehensive modelling of the effects of interventions at different levels. Such an approach can enable a better targeting of interventions aimed at poverty reduction. Hence, value chain aims at identifying how the productivity of chain activities can be improved, either through improved technologies, organizations or institutions to better coordinate the various stages of production and distribution, and meet consumer demand. Since final demand is the major driver of agricultural value chains, a strategy to improve the competitiveness of a value chain should consider the nature of products in relation to the type of markets where the product is sold for final.

Value chain analysis is conducted for a variety of purposes. The primary purpose of value chain analysis, however, is to understand the reasons for inefficiencies in the chain, and identify potential leverage points for improving the performance of the chain, using both qualitative and quantitative data. In general, agricultural value chain analysis can be used to:- understand how an agricultural value chain is organized (structure), operates (conduct) and performs (performance). Performance analysis should concern not only the current performance of the value chain, but also likely future performances, as well.

- Identify leverage interventions to improve the performance of the value chain;
- analyze agriculture–industry linkages;
- analyze income distribution;

- analyze employment issues;
- assess economic and social impacts of interventions;
- analyze environmental impacts of interventions;
- guide collective action for marketing;
- guide research priority setting; and
- conduct policy inventory and analysis.

In general, undertaking a sub-sector or market chain analysis is a way of gaining insight into the (a) operations of specific market channels while focusing on their growth potential, (b) activities and efficiency of actors along the chain, (c) business support services involved, and (d) policy and regulatory frameworks. With the information from the analysis, opportunities and constraints can be identified within specific market chains, and ways can be seen to improve a defined client's capacity to compete more effectively. It is also clearly stated that a market chain is used to describe the numerous links that connect all the actors and transactions involved in the movement of agricultural goods from the farm to the consumer, it means agricultural goods and products flow up the chain and money flows down the chain.

Taking a value chain approach to economic development and poverty reduction involves addressing the major constraints faced by farmer producers, processors, traders and other businesses at multiple levels and points along a given value chain. This will inevitably include a wide range of activities such as: a) *ensuring access to the full range of necessary inputs, b) facilitating access to cheaper or better inputs, c) strengthening the delivery of business and financial services, d) enabling the flow of information, e) facilitating improved market access, or increasing access to higher-value markets or value-added products*.

22.5 Constraints and limitations in value chain development

Actual value chain debates concentrate on how to create and distribute gains from economic activities better and how to do so in developing countries. This includes questions of how smallholders and marginal farmers and their business organization from developing countries gain access to dynamic markets and to a higher share of value. As mentioned earlier Business Development Services has a great role in determining the enabling environment and performance of value chain actors. To mention an example, the following are some of the challenges and/or constraints that found at different levels of value chain actors as identified in a study conducted on a rice value chain development in Fogera woreda, South Gondar zone.

Producers' constraints

Lack of improved seed varieties, lack of pure seed, diseases and pests, malpractice in selling method (scaling or weighing), lack of market, lack of information exchange, transport problems, lack of capital and credit services, poor collective bargaining power for marketing., lack of market information, low quality product (polished rice), poor quality and delay in input supply, knowledge gap in rice cultivation and post harvest handling, absence of threshers, absence of rotary weeders that reduce work burdens of women, limited access and supply of inputs particularly of improved seeds, high labour demand for crop management (weeding, harvesting and threshing), lack of transport facilities etc.

Processors' constraints (post harvest processing problems)

Lack of good quality paddy rice processing machine, limited infrastructure and electric power supply, lack of skilled people for the subsector, knowledge and information gaps on processing and processing machines, lack of capital, lack of quality processing technologies, different varieties grown together that yields different sized seeds, adulteration by farmers for better weight when selling etc

Traders' constraints

Capital shortage, lack of information and high tax payment, prior control of farmers (handling and attracting farmers to be a client supplier before other competitors handled), lack of reliable information and competition etc.

Consumers' constraints

Mixture of broken rice grain seed, after the grain seed is packed for sale in the market, poor quality of the grain/seed, sticky nature when it is cooked etc

22.6 Activities help strengthen agricultural value chain development

The following are, but not limited to, among the activities that help strengthen agricultural value chain development either directly or indirectly.

- Encourage the involvement of private sector for example in the input supply system such as improved seeds, fertilizers, farming tools etc;
- Minimize the mistrust and less transparent relations between processors and producers through discussion forums, close communications, proper information flows etc;
- Promote joint evaluation of the field action research (agronomic field demonstrations) conducted jointly by research centres and farmers;
- Promote on farm demonstrations and farmers' field visit days to easily disseminate technologies;
- Enhance capacity building activities at different levels in the value chain (farmers, processors, extensionists, consumers etc);
- Strengthen the linkage/interaction among value chain actors through proper coordination and fostering of business development service (BDS) providers; and
- Limiting NGOs role to facilitations only and, NGOs should not be involved on direct implementations. Direct implementation should be by the actors themselves and should be embedded in its nature.

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