

# Watershed Management toward Livelihood Improvement

- Keshar Man Sthapit\*

## Background

Intensification of land use without adequate conservation measures in fulfilling daily needs for food, fodder, fuel wood and fibre of the ever growing population resulted in watershed degradation in Nepal. The Government of Nepal established the Department of Soil Conservation and Watershed Management (DSCWM) under the Ministry of Forests and Soil Conservation in 1974 as a principal authority to address the increasing watershed degradation.

Realizing the importance of the integrated approach to the watershed management, DSCWM has adopted multi-disciplinary approach since its inception. DSCWM has integrated forestry, agriculture and engineering disciplinary in packaging mitigation measures in managing land utilization, rehabilitating degraded land and erosion control in the watershed to suit the specific social and economic context. Watershed management programme has broadly classified Land Use Planning, Land Productivity Conservation, Natural Hazard Prevention, Infrastructure Protection and Community Soil Conservation.

### Programme Activities of DSCWM<sup>1</sup>

**Land Use Planning:** watershed and sub-watershed management plans based upon scientifically assessed land capability and technical services for land use development.

**Land Productivity Conservation:** on-farm conservation, grass plantation, fodder/fuel-wood/fruit tree plantation, agro-forestry, and greenbelt/shelterbelt establishment.

**Natural Hazard Prevention:** gully treatment, landslide treatment, torrent control, stream-bank protection, and degraded land rehabilitation through bioengineering methods.

**Infrastructure Protection:** road slope stabilisation, trail improvement, irrigation canal protection, and water source conservation.

Community Soil Conservation: **extension education, demonstration, training, workshops, study tours, workshops, school conservation, and exhibition.**

Participatory management has been main working strategy of the watershed programme. Apart from assisting in maintaining ecological balance by reducing pressure from natural hazards such as floods and landslides, watershed programme has an objective to contribute in meeting the people's basic needs for forest and food products by improving the productivity of the land. Therefore, to contribute to livelihood improvement is an integral concern of the watershed programme in Nepal.

## What is Livelihood?

Livelihood improvement means many things. It is multi faceted and means balanced development. Local Development Training Academy (LDTA, 1997)<sup>2</sup> defined the improvement in the service, economy, environment and democratic and social norms and values as the four pillars of the balance development. That means balance development encompasses (i). **Service** sector such as education, transport, drinking water, health, communication, (ii). **Economy** sector i.e. increase production therefore earning for individual, group and nation, (iii) **Environment** sector i.e. pollution free air to breathe, clean and green diversified environment to enjoy, and (iv). **Democratic and social norms and values** for people to exercise good governance in decision making. Development without equal emphasis on these four aspects is a disable development. In summary, livelihood improvement may be defined as the improvement in the service, economic, environment, democratic and social dimensions "Service Economy Environment Democratic Norm". This may be briefly abbreviated as "SEED"

<sup>1</sup> DSCWM, 1998. *An Introduction to Soil Conservation and Watershed management in Nepal.*

<sup>2</sup> LDTA, 1997. *LDTA Reference Manual for VDC Level Training. Local Development Training Academy. Nepal.*

\* Watershed Specialist, ICIMOD. [ksthapit@icimod.org](mailto:ksthapit@icimod.org)

## Watershed Management in Relation to Livelihood

The watershed programme may be broadly categorized into service, economy and environment related activities and working approach follows the democratic and social norms see table below.

<p>Service related activities:</p> <ul style="list-style-type: none"> <li>§ Water source protection</li> <li>§ Trail improvement</li> <li>§ Irrigation channel improvement</li> <li>§ Road slope stabilization</li> <li>§ Non-technical services like conservation education and extension, capacity building, etc</li> </ul>	<p>Economy (Production) related activities:</p> <ul style="list-style-type: none"> <li>§ On-farm Conservation</li> <li>§ Fruit tree planting</li> <li>§ Conservation pond</li> <li>§ Fodder and grass planting</li> <li>§ Income generating activities</li> </ul>
<p>Environment related activities:</p> <ul style="list-style-type: none"> <li>§ Gully treatment</li> <li>§ Landslide treatment</li> <li>§ Torrent control</li> <li>§ Stream bank protection</li> <li>§ Degraded land Rehabilitation</li> </ul>	<p>Democracy related approaches:</p> <ul style="list-style-type: none"> <li>§ Participatory and inclusive bottom-up planning</li> <li>§ Participatory monitoring and evaluation</li> <li>§ Public auditing</li> </ul>

This indicates the watershed programme is well aligned with the livelihood focus.

## Challenges

Each activity although has been placed into one category because of its major contribution to that group, but it also contributes to another pillar of balanced development or livelihood. Challenges here are how each activity can be designed and implemented to contribute to the more aspects of the livelihood improvement. This can be explained with example of water source protection activity.

### Water Source Protection (Sthapit, 2003)<sup>1</sup>

Water source protection is one of the main activities of the watershed programme. DSCWM initiated this activity aiming to improve its hydrological regime through proper treatment of the catchment area of a water source such as plantation, diversion canal, manage catchment area as per its suitability of the site, etc. But, usually the community, for whom the water source protection is intended, has interest to construct intake at the source to collect water and supply to their houses for drinking through pipe. Similarly, wastewater from the tap can then be collected in a small pond and utilised for vegetable farming to

While designing and implementing such water source protection activities attention should be given to proper land-use and erosion control works in the water source catchment (**Environment**), proper construction of intake, piping, and taps to supply water to individual houses (**Service**) and construction of small ponds to collect waste water for vegetable production (**Economy**) and selection and implementation and maintenance of the activity through active participation (**Democratic norms and values**). This makes the activity a complete package compatible to **Service Economy Environment Democratic Norms** - concept. This is how a watershed activity can be design and implement and contribute to livelihood improvement.

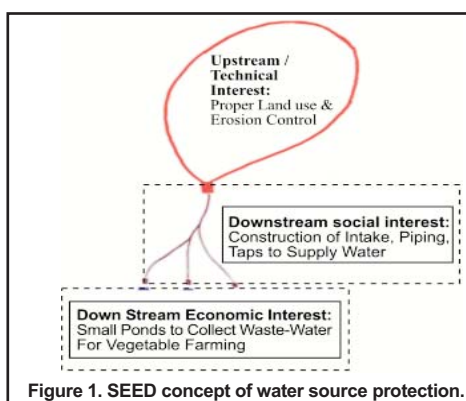


Figure 1. SEED concept of water source protection.

<sup>1</sup> Sthapit, K. M., 2003. Decentralization and Governance: As A Local Capacity Building Initiative - A Case From Soil Conservation and Watershed Management Component, Nepal. A paper prepared for the 5<sup>th</sup> Danida International Workshop On Capacity Development Initiative In Watershed Development Programmes. 10<sup>th</sup> -21<sup>st</sup> November 2003, Indore, Madhya Pradesh, India.

## Conclusion

Indirectly, livelihood improvement is one of the major millennium development goals. Designing of the watershed activities and its implementation following "SEED" concept of the livelihood is becoming today's urgent need. Therefore, packaging and implementation of the watershed activities in line with the "SEED" concept of the balance development, livelihood improvement must be emphasized so that watershed management along with environmental conservation will also fulfil the service and economic aspects of the livelihood. As the DSCWM has adopted a policy to implement all activities through peoples participation, to strengthen democratic aspects, participatory and decentralized approach must be fully further endorsed. This orients watershed programme more toward fulfilling the Millennium Development Goals 1 (Eradicate Extreme Poverty and Hunger) and Goal 7 (Ensure Environmental Sustainability).

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पारिस्थितिक अक्षुण्णता कायम राखौं ।"

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