Watershed Management and Livelihoods: Lessons from Nepal

Bishnu Hari Pandit*, Mohan Prasad Wagley, Ramji Prasad Neupane*** and Bharat Raj Adhikary***

* New ERA

** Ministry of Forest and Soil Conservation

*** Canadian Corporation Office

Corresponding author: bhpandit@ntc.net.np

Abstract: Watershed management is a holistic approach to managing watershed resources that integrates forestry, agriculture, pasture and water management, with an objective of sustainable management of natural resources. This approach seeks to promote interactions among multiple stakeholders within and between the upstream and downstream locations of a watershed. The experiences from Nepal suggest that these ideals of watershed management do not appear to be strongly linked with the current policies, programmes and practices. A mechanism for constant dialogue between policymakers, practitioners and communities at landscape level would help in linking the upstream and downstream ecology to improve the livelihoods of the local people and sustainable watershed resource management.

Key words: watershed management, upstream and downstream, conservation and livelihoods

INTRODUCTION

Integrated landscape management approaches are now considered as innovative options for sustaining ecosystems while improving human welfare. More specifically, watershed management (WM) has become an increasingly important issue in many mountainous countries, including Nepal. WM encompasses the holistic approach to managing watershed resources that integrates forestry, agriculture, pasture and water management, which can be broadened to rural development with a strong link to the livelihoods of the local people (Pudasaini 2003). Sustainable management of upland natural resources for the welfare of local population is one of the key objectives of WM.

The hills and mountains of Nepal are the watershed areas with most fragile ecosystems and poor agricultural potential due to their steep slopes, fragile mountain geology and poor quality soil. Studies carried out in various parts of the country (Blaikie and Brookfield 1987; Carson 1992; Thapa and Weber 1993; Pandit and Thapa 2004) point out that, problems such as forest depletion, land degradation, improper water management, air pollution and food security in the country are related to the WM problems. These problems are further aggravated by improper management of upstream areas, where the government's effort is limited (Thapa and Weber 1993; Wagley and Bogati 1999). These problems are caused partly by people's encroachment upon, and destruction of, forests and pastures for commercial crop cultivation, livestock ranching, logging and promotion of special political interests (Thapa and Weber 1993; Wagley and Ojha 2003; ICIMOD 2006) and partly by the lack of upstream and downstream linkages in planning and implementation (Thapa and Weber 1993; ICIMOD 2006).

Conflicts between upstream and downstream users of land, forest and water are on the rise because of the limited access of poor people to these resources. As upstream and downstream areas are hydrologically interlinked, it is not possible to ensure the long-term protection of downstream river banks without conservation of upstream land (Sthapit and Bendtsen 2000; Rimal 2003; ICIMOD 2006). For example, the Churia and Bhabhar region is important for the ecological and economic development of the Terai region because it is the recharge zone for the groundwater of the Terai. More importantly, this region receives higher rainfall than the Terai and mid-hills, and is hence crucial for recharging agricultural productivity and the

most densely populated region of Nepal Terai.

In Nepal, nearly 31% of the people live below poverty line (CBS 2004), and lack access to good quality land and off-farm employment opportunities. Therefore, they are compelled to encroach upon forests and pastures for fulfilling their basic needs of food, fodder and fuel (Carson 1992; Thapa and Weber 1993; ICIMOD 2006). Increasing depletion of forests, as well as the ongoing political conflict in the country, has destabilized the whole system to such an extent that the future of both the highlanders and lowlanders of Nepal is at risk (Pandit and Thapa 2004; ICIMOD 2006). The majority of poor people who live in the hills or the Terai of Nepal, or upstream or downstream of any watershed, rely on agriculture for their employment, but they spend a high proportion of their income on food and other basic needs such as clothing and shelter (Wagley and Bogati 1999; Pandit and Thapa 2004). Therefore, intensifying sustainable agriculture through technological and managerial innovations, along with management of forest, land and water resources, continue to be crucial, through which the twin objectives of poverty reduction and sustainable conservation can be met.

In view of the above background, this paper reviews the existing watershed policies and watershed management programmes in Nepal. It begins with the development of policy processes as well as their impact on the livelihoods of watershed settlers from both upstream and downstream regions, and draws key lessons on watershed policy and conservation and livelihoods programmes. This paper is primarily based on secondary information, along with authors' own insights based on their experiences of working in the field for the past several years.

EVOLUTION OF WATERSHED MANAGEMENT POLICIES AND PROGRAMMES

The importance of watershed management in the uplands of Nepal was realised by the Government of Nepal in the Third Five-Year Plan (1965-1970). Since then, different interventions in terms of policies and programmes have been in effect (see Table 1 for details).

Table 1: Evolution of WM Policy/Plan in Nepal

Plan Year	Changes in Policies/Plan
1965-1970 (Third Plan)	The importance of soil and water conservation (SWC) realised for the first time
1970-1975 (Fourth Plan)	Department of Soil & Water Conservation (DSWC) under Ministry of Forests established in 1974
1975-1980 (Fifth Plan)	National Forests Policy 1976 comes into effect Shivapuri Watershed Area Development Board 1976 created Nepal Remote Control Centre 1979 established in DSWC Policy to execute soil and watershed conservation extension and education programmes nationwide promulgated Regional Development Concept in Soil Conservation & Watershed Management (SCWM) introduced Fourteen WM projects implemented in four regions Concept of integrated WM introduced River control work continued
1980-1985 (Sixth Plan)	Environmental impact assessment (EIA) initiated for development projects DSWC's name changed to Department of Soil Conservation & Watershed Management (DSCWM) River control work transferred to Ministry of Water Resources Name of Ministry of Forests changed to Ministry of Forests & Soil Conservation (MFSC) Soil Conservation Act 1982 and Regulations 1985 came into effect High-level National Resource Conservation Commission (NRCC) formed under MFSC Environment Impact Study Project 1980 established under DSCWM

1985-1990 (Seventh Plan)	EIA of development projects made mandatory Environment Division established in DSCWM (later transferred to MFSC) Twenty-five-Year Master Plan for the Forestry Sector, keeping SCWM into priority programme, came into effect, 1988 National Conservation Strategy 1988, with higher emphasis on SCWM, endorsed by Government NRCC re-formed as Council of National and Cultural Resources (CNCR) under National Planning Commission
1992-1997 (Eighth Plan)	Tendency to expand SCWM offices in the districts increased with political interests and priorities Ministry's name changed to Ministry of Forests and Environment, 1992 Environment Division was created in the Ministry and later dissolved Ministry again renamed as Ministry of Forests and Soil Conservation
1997-2002 (Ninth Plan)	Nepal Environment Protection Action Plan 1998, with priority to SCWM, came into effect Forest Sector Policy 2000 emphasised people's participation, private sector, including NGO and civil society involvement, and Integrated WM approach or strategy was prioritised in the policy 45 permanent and 10 district soil conservation offices established
2002-2007 (Tenth Plan)	Churia/Siwaliks emphasised People's participation, integrated WM, people's awareness programmes, land productivity, flood control and income-generating programmes emphasised Concept of user groups such as formation of CDGs/CDCCs continued to develop to mobilise people's participation in SCWM programmes

Table 1 shows that the Sixth Plan prioritised environmental protection and creation of off-farm employment opportunities to reduce pressure on natural resources, and formulated regulations to prevent environment degradation likely to be caused by the development of infrastructure. The Soil and Watershed Conservation Act 1982 and Regulations 1985 provided legal basis to the Department of Soil Conservation and Watershed Management (DSCWM). With this legal arrangement, the department is empowered to declare any watershed as a protected watershed, in addition to developing, protecting and conserving its resources. These regulatory mechanisms, however, could not be actively pursued nationwide, primarily because of lack of clarity of their regulatory process. Also, a high-level policymaking body—the National Resource Conservation Commission (NRCC)—could not function as intended, largely because of lack of coordination and ownership among ministries and departments. Similarly, the Seventh Five-Year Plan aimed to improve water resources management, increase agriculture and forest produce, and maintain a balanced environment through the conservation and improvement of natural resources. The Master Plan for Forestry Sector (MPFS) considers watershed management as one of its priority programmes. The National Conservation Strategy recommends that the DSCWM work closely with other departments, NGOs and private sectors. These recommendations, however, could not be implemented due to lack of clarity in policies and guidelines.

The Eighth Plan (1992-1997) is considered as a milestone in people's participation in watershed management. The DSCWM brought out programme implementation strategies and people's participation guidelines, which made provision for partnerships with NGOs and CBOs. This provision emphasises the formation of user groups and the need to involve them in planning, implementing and decision-making. This plan also includes group savings and credit mobilisation. During the Ninth Plan period, the Nepal Environment Policy and Action Plan (NEPAP) II (1998) enunciated a policy of involving local communities and civil societies in watershed management and in providing technology such as new crop varieties, agricultural technology and land use system. The plan further recognised WM as one of the supporting programmes in poverty reduction. The Tenth Plan (2002-2007) is the continuation of the Ninth Plan, and emphasises the involvement of the private sector and civil society groups in improving the livelihoods of the rural poor and strengthening the institutional governance process. This plan focuses on a participatory, integrated sub-watershed management planning approach and

networking of watershed management stakeholders. The Forestry Sector Policy 2000 also emphasises protection of Churia hills, considering its vulnerability to erosion and landslides. In this policy, conserving upstream for the benefit of downstream population is highlighted.

The development of watershed management policies has made two major innovative provisions in relation to benefiting local people and engaging wider stakeholders in the sector. The Forestry Sector Policy 2000 and the Tenth Plan emphasise that the poor, landless and disadvantaged communities must benefit from the WM programmes. Although the integrated WM strategy of the Seventh and Eighth Plans made a provision of involving NGOs as partners in implementing the programmes, these institutions were not involved in the policy process. However, when the government strategy on partnering with NGOs and civil society came into practice during the Ninth Plan period, different NGOs and community-based organisations (CBOs) were consulted in the policy process. Now, there is an increasing trend towards involving NGOs and CBOs in the project design, implementation and evaluation processes.

EVOLUTION OF ACTORS AND THEIR INFLUENCE IN WATERSHED MANAGEMENT POLICIES AND PROGRAMMES

Many actors at international, national, district and local level have influenced the processes of formulation and implementation of WM policies and programmes in Nepal. Their contributions to the formulation of the MPFS, Agriculture Perspective Plan, Water Resources and Irrigation Plan have been invaluable. Development partners such as the United Nations Development Programme (UNDP) and Food and Agriculture Organization (FAO), United States Agency for International Development (USAID), Asian Development Bank (ADB), German Development Assistance (GTZ), Swiss Development Cooperation (SDC), Finnish Development Agency (FINNIDA), Danish Development Agency (DANIDA) and Japan International Cooperation Agency (JICA) have actively facilitated the processes and implementation of the WM policy. For instance, UNDP and FAO were directly involved in the formulation of an integrated WM policy, extension and education of WM programmes nationwide, establishing research and demonstration plots, and a national inventory of watershed conditions. Similarly, USAID was involved in facilitating remote sensing technology for WM planning, establishing catchments conservation committees for local-level participation, developing human resources of DSCWM and grass roots institutions. Similarly, GTZ and the SDC were involved in framing a policy on participatory village-level planning that involved women and disadvantaged groups in income-generating and livelihood programmes, as well as in developing the concept of ward conservation committee (WCC). FINNIDA played a very active role in developing the MPFS, implementing an integrated WM plan and research in watershed. DANIDA and JICA played an important role in formulating departmental policy—particularly community-based planning—to mobilise real stakeholders, including those of various castes, ethnicity and gender, as well as in capacity development of department, nongovernmental organisations (NGOs), CBOs and community development groups (CDGs).

Some international INGOs such as the International Centre for Integrated Mountain Development (ICIMOD), The World Conservation Union (IUCN) and CARE-Nepal have also been actively involved in the development of WM policies and programmes. ICIMOD and IUCN's involvement in the development of department policy was to carry out low-cost sloping agriculture land technology (SALT), bioengineering technology, field research and demonstration in the field. CARE was involved in framing department policy and enhancing societal relationships, exploring economic opportunities and issues related to equity for the poor and deprived so that they have access to decision-making and resources, as well as partnering with various NGOs and CBOs.

Local NGOs and CBOs have also contributed to the development of policies, particularly through watershed management projects. For instance, the DSCWM received

contributions from local NGOs and CBOs in the formulation of the Churia WM policy from the very beginning. Similarly, the Nepal–Denmark WM Project collaborated with some NGOs such as the Nepal Agro-forestry Foundation (NAF) in a project design and evaluation process. Furthermore, many NGOs and CBOs have been participating in village- and district-level planning and implementation of WM. The district soil conservation offices (DSCOs) have been involving NGOs and CBOs to motivate stakeholders, communities and user groups in mobilising local resources, fund flow, and management and planning of other local resources. DSCOs have been coordinating the implementation of WM policies and plans at both district and local level.

IMPLEMENTATION OF WATERSHED MANAGEMENT PROGRAMME

Basically three phases are involved in the implementation of the WM programmes. These include: a) identification of primary users and formation of a committee as well as planning; b) implementation; and c) and monitoring of planned activities. DSCOs identify primary users, as well as their priority problems and programmes, through field-level consultations with stakeholders and communities. Then, DSCO officials and user groups jointly prepare an implementation plan, which lays down WM activities, level of participation from users, government contribution, work assignment and time schedule. CDG implements the plan after receiving approval from local government bodies, including Village Development Committee (VDC) and District Development Committee (DDC). DSCOs provide necessary tools, equipment, and technical and financial support to users to implement the plan and monitor its implementation. The CDG makes internal rules and regulations on maintenance and benefit-sharing among members, whereas the community development committee (CDC) implements these rules and also arranges local people's participation in the programme.

Although implementation modalities vary between various projects and agencies, generally the locally hired project staff facilitate programme implementation at local level. In most of the WM projects, a range of small-scale income-generating activities have been launched to benefit the poor, which include planting medicinal plants in degraded land and introducing agro-forestry in marginal land. In addition, savings and credit groups, mothers' groups and disadvantaged groups of the poor have been formed and economic programme packages introduced to strengthen their capacity and expand their economic activities.

OUTCOMES OF POLICY AND PROGRAMMES AT LOCAL LEVEL

Although the downstream impacts of upstream interventions are high in the discourse on watershed management, there are very few programmes and achievements in terms of linking the two. The trickle down effects of water conservation, reduced soil erosion, hence decreased sedimentation in the plains, and other environmental benefits are obvious when upstream watersheds are managed properly, though the total accounts of outcomes and impact of such interventions are limited.

While analysing the outcomes of the WM programmes, professionals tend to consider the upstream benefits. Different ways have been suggested for analysis. For example, Wagley and Bogati (2000) categorises WM activities into conservation farming, community forestry (CF), agro-forestry, conservation engineering, and community empowerment and sustainability, whereas Guragain (2002) categorises the WM activities into five groups, viz. land use planning, land productivity conservation, natural hazards prevention, infrastructure protection and community soil conservation. For assessing the impact of watershed policy and programmes, we use the former approach to classifying the WM activities.

Conservation Farming

The benefits of the WM programme under conservation farming include the income from cereal crop cultivation, fruit and vegetable growing, and cultivation of cash crops (banana, pineapple, orange, coffee and ginger). Fruit and vegetable farming promoted by the Begnas Tal Rupa Tal (BTRT) watershed project, Rapti Development Programme (RDP), Dang, and

Galaundu Pokhare Integrated Watershed Management Project (GPIWMP) are some of the best examples of achieving desired results (see Table 2). For instance, in a GPIWM project, the percentage of income from agronomy (out of total household income) increased from 6.6 in 1999 to 27.1 of in 2004. The average household income per year from horticultural crops (vegetables and fruit) was Rs. 4,230 and Rs. 9,390 in 1999 and 2004 respectively. The qualitative surveys or interviews with key informants also corroborated the improved results in horticultural farming. The informants had said that one of the important gains from the project was the availability of vegetable seeds, fruit saplings and the related training given to them by the project. The local people expressed that the impact of such intervention was higher in the downstream than in the upstream. In spite of this success, the downstream users have not shared the costs required for the conservation of the upstream areas. This is also true in other watershed areas of Nepal.

Community Forestry

All programmes have included CF activities in their project areas. Projects such as Participatory Upland Conservation and Development (PUCD), Gorkha district, Community Development and Forest/Watershed Conservation (CDFWC), Kaski and Parbat districts, and Siwalik Bhawar Watershed Management Project (SBWMP) appear to be effective in promoting community forestry. In the PUCD project, the maintenance and benefit-sharing mechanisms have been effective where women and disadvantaged groups had access to benefits from distribution of CF resources such as firewood, fodder and non-timber forest products (NTFPs). A typical example of this model is found in Amarai VDC and Rip Women Community Forest User Group. The CDFWC project, for instance, helped local people to plan and implement community forest management activities, focusing on income generation for the poorest families. The project involved women in planning and decision-making, and also implemented special activities to address the issues of participation of women and disadvantaged groups (Wagley and Bogati 2000). SBWMP implemented CF in upstream areas to address the upland-lowland interdependence and mutual flow of resources. This could be an effective means of protecting and increasing productivity in the downstream Terai (Statz and Kotru *et al.* 2007).

Agro-forestry

The local people in the watershed areas have benefited by raising their income through a number of agro-forestry-based income-generating activities. The people of Gohar Khola and Pareni watershed of Dang district have raised income by selling the wood, grass and bamboo planted on private and degraded community land. The individual farm approach in the Bagmati Integrated Watershed Management Project (BIWMP) area also effectively raised the household income through integrated farming such as multi-storey cropping, vegetable growing and livestock rearing. In Udayapur, Siraha and Saptari districts, poor and marginalised communities have benefited through agro-forestry-based income-generating activities by managing the reclaimed land on river banks, which is supported by SBWMP (Wagley and Bogati 2000). Similarly, in Jhikhu Khola watershed in Kavre district, growing of grasses in private lands has reduced the workload of women and children for collecting grasses for their cattle (ICIMOD 2006). GPIWMP has significantly raised the income level of local communities through agro-forestry. However, time factor appeared to be crucial to realise the benefits of agro-forestry practices.

Conservation Engineering

Conservation engineering activities such as construction of water harvesting catchment ponds, irrigation channel improvements, water source protection, river and stream embankments, and forestation on degraded land in the foothills and river flood plains were carried out by many watershed projects and programmes in Nepal. These projects and programmes have been effective mainly in the BTRT, Upper Andhi Khola, Rapti Development Programme, CDFWC project, Nepal-Denmark Watershed Management (NDWMP), BIWMP, SBWM and GPIWDP. Local people mentioned that in the Rapti Development Programme in Dang and SBWM in Siraha and Saptari, the water yield had improved in both quality and quantity in watershed programme-intervened areas. The CDFWC project of Kaski and Parbat has

been successful to bring about change in community infrastructures. The SBWMP promoted sustainable management of natural resources, including soil, river and water conservation in Udayapur, Siraha and Saptari districts. Wagley and Bogati (2000) claims that low-cost bioengineering techniques, together with earthen dykes for river training measures, were very effective and impressive for conservation.

Community Empowerment and Sustainability

The WM policies and programmes have proved to be very successful in building the local capacity to take the responsibility of sustainable management of watershed resources. CDG, representing all households in the community, irrespective of caste, gender, economic class and ethnicity, has been the main vehicle for implementing the watershed development activities. The members of CDG elect a committee called CDC, which takes the responsibility of planning and mobilising all local resources. Many communities have shown keen interest in sharing not only labour but also cash. For instance, an incentive grant of NRs. 5,000 for the construction of a conservation pond was increased to about NRs. 20,000, with additional voluntary donations by community members.

Other popular activities of watershed programmes include irrigation channel and terrace improvement. Furthermore, savings schemes were another successful venture launched by many projects. The trend for changes in household income (Table 2) shows that watershed settlers have been gradually adopting watershed-friendly activities such as agro-forestry and improved agriculture farming.

Table 2 Change in Average Annual Household Cash Income ('000 Rs) in five years (1999 to 2004) in Galaundu Pokhare Sub-watershed, Dhading

Income sources	Year 1999		Year 2004		The Change	
	Amount	% of Total	Amount	% of Total	Difference	Ratio
Agronomy	0.91	6.6	11.43	27.1	10.52	12.5
Horticulture and cash crops	4.23	30.7	9.39	22.3	5.15	2.2
Agro-forestry and livestock	2.15	15.6	5.11	12.1	2.96	2.4
Sub-total	**7.29**	**52.9**	**25.93**	**61.5**	**18.63**	**3.6**
Salary/wages	4.27	31.0	12.62	30.0	8.35	3.0
Others	2.23	16.2	3.60	8.5	1.36	1.6
Sub-total	**6.50**	**47.1**	**16.22**	**38.5**	**9.71**	**2.5**
Total	**13.80**	**100.0**	**42.14**	**100.0**	**28.35**	**3.1**
Household size	6.74		6.45			
Per capita	2.05		6.53			

Source: NAF Project Assessment, 2005.

LESSONS LEARNT

The watershed management programme is an example of engagement of multi-stakeholders with multiple interactions from both upstream and downstream areas. But there seems to be a lack of long-term and broader vision and actions of ecological approach to WM. Hydrological balance and economic benefits in the long term have not been considered in the current practice. The linkages between the highland and lowland, upstream and downstream—the core principles of WM—do not appear to be strongly linked with the current programmes and practices. Largely, the activities are being carried out at sub-watershed level; therefore, their link needs to be established at landscape level. However, the Churia project has supported networking between upstream and downstream settlers for the development of a resource development

strategy in Udayapur, Siraha and Saptari districts (Laubmeier and Warth 2004). The learning of this networking would be helpful in other areas as well.

A number of actors emerged over time along with the new policies and programmes. Particularly, the donor communities have an influencing role in shaping both policies and programmes. Similarly, national actors such as NGOs and CBOs have also been active in facilitating the activities of watershed management at grass roots level. However, they tend to focus more on conservation of hydrological system without instituting clear mechanisms of equitable benefit flow to the upstream and downstream communities.

Although CDGs appear to be robust legal local institutions in sustainable management of watershed resources, their sustainability is still a question. Almost all of them are dependent on donor support to develop and maintain WM activities. Many have already collapsed as they donor support or external resources.

While support for the household appears to be effective in raising its income, the impact has yet to reach the poorest of the poor and landless people. Elite domination in implementing WM activities is a widespread phenomenon. Elite, particularly members of high class and caste families, are reluctant to share power and resources with lower class and caste groups. For instance, though each CDG and network has created a group fund for community development activities, they are found less interested to invest these funds in income-generating activities for the poor.

Although partnerships among CDGs and NGOs have positive impact in terms of giving space to the people, the *dalit*, poorest of the poor and women have usually been left behind. One of the most notable changes is that many NGO-supported CDGs shifted from working in relatively isolation to building alliances and greater interdependence. In NGO-supported sub-watershed projects, interestingly, the development of relationship between the government and NGOs appears to have contributed to shifting the attitudes of local stakeholders, including CDGs, towards equity and justice. Furthermore, social relations among stakeholders and equity among CDG members have increased.

These lessons have led to an implication that a larger landscape-level upstream and downstream dialogical relations need to be placed through watershed management policies and programmes. Constant dialogue between policymakers, practitioners, communities and public at large on the importance of WM for both local livelihoods and conservation would help create better understanding among these stakeholders. Vulnerable groups such as the poor, marginalised and women need to be given particular attention, as their time in community-based WM is very critical. To enhance better understanding of WM among these stakeholders, communication and coordination, both laterally and vertically, and from community to national level, should be encouraged. In doing so, national stakeholders, particularly Ministry of Forest & Soil Conservation and Ministry of Agriculture & Cooperatives, should be encouraged to establish formal and informal platforms.

Meaningful networking, coordination and partnership among central government line agencies, local government bodies and NGOs, as envisaged in the Local Self-Governance Act 1999, is very crucial for the successful implementation of WM activities. Particularly, balanced relationship between civil society and government agencies is very necessary, and continuous efforts are needed to flourish and maintain it. Compulsory provisions for positive discrimination in favour of marginalised groups in decision-making process would contribute positively to bring about desired changes in terms of social inclusion and equity. The stakeholders involved in a WM programme have not developed a culture of entering into upstream-downstream dialogue in a trans-boundary context. In order to overcome this problem, dialogue among different stakeholders at various governance level needs to be organised.

REFERENCES

Blaikie, P. and Brookfield, H. 1987. *Land degradation and Society*. London and New York: Methuen.

Carson, B. 1992. The Land, The Farmer, and The Future: A Soil Management Strategy for Nepal. *Occasional #paper # 21,* Kathmandu: ICIMOD.

CBS. 2004. *Nepal Living Standard Survey Report, Main Finding.* Katmandu: Central Bureau of Statistics.

Guragain, C.P. 2002. Watershed Management in Nepal. A paper presented in the Regional Workshop on Watershed Management: A South Asian Perspective, 19-21 November 2002, Kathmandu, Nepal.

ICIMOD. 2006. Managing Flash Floods and Sustainable Development in the Himalayas, In: Jianchu, Xu, Mats Eriksson, Jacob Ferdinand and Juerg Merz (Eds.), *Report of the international workshop held in Lhasa, PRC*, October 23 – 28. 2005. Kathmandu, Nepal: International Centre for Integrated MOuntain Development.

Laubmeier, P and Warth, H. 2004 *Restoring Balances: Milestone of the Churia Forest Development Project in Eastern Nepal*. GTZ

NAF. 2005. Assessment of the Galaundu-Pokhare Sub-Watershed Community Resource Management Project, Dhading (Nepal) – Project evaluation report. Phulbari, Koteswar, Kathmandu: Nepal Agroforestry Foundation,

Pandit, B.H. and Thapa, G.B. 2004. Poverty and resource degradation in the mountains of Nepal. *Society and Natural Resources*, **17**:1-16.

Pudasaini, B.P. 2003. *VDC Approach- A Key to Success in Participatory Watershed Management.* A paper presented in the Regional Workshop on Watershed Management: A South Asian Perspective, 19-21 November 2002, Kathmandu, Nepal.

Rimal, B.K. 2003. Watershed Management in Regional Perspectives: A Case Study on the Experience of Watershed Management in the Churia and Bhabhar Regionof Nepal. A paper presented in the *Regional Workshop on Watershed Management: A South Asian Perspective (19-21 November 2002, Kathmandu, Nepal).*

Sthapit, K.M. and Bendtsen, K.S. 2000. Pitfalls in Participatory Watershed Management- A Case Study from Nepal. In: K.S. Bendtan and K. Stapit (Eds.), *Danida Watershed Development. Proceeding of Danida Third International Workshop on Watershed Development*. Kathmandu Nepal: Sewa Printing Press.

Thapa, G.B. and Weber, K.E. 1993. *Managing Mountain Watersheds, Upper Pokhara Valley Nepal*. Bangkok, Thailand: Division of Human Settlements Development, Asian Institute of Technology.

Wagley, M.P. and Bogati, R. 1999. State of Art and Status of Watershed Management in Nepal. In: K.S. Bendtan and K. Stapit (Eds.), *Danida Watershed Development. Proceeding of Danida Third International Workshop on Watershed Development*. Kathmandu Nepal: Sewa Printing Press.

Wagley, M.P. and Bogati, R. 2000. State of Art and Status of Watershed Management in Nepal. In: K.S. Bendtan and K. Stapit (Eds.), *Danida Watershed Development. Proceeding of Danida Third International Workshop on Watershed Development*. Kathmandu Nepal: Sewa Printing Press.

Wagley, M.P. and Ojha, H. 2003. Analyzing Participatory Trends in Nepal's Community Forestry. Policy Trend Report, IGES, Forest Conservation Project.