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Recommendations for Developing National Action Plans:

The Sustainable Livelihood and Natural Resources Management, Tajikistan

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Project: Poverty Alleviation by Mitigation of Integrated high-mountain Risk (PAMIR)

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Abbreviations and Acronyms

ADB	Asian Development Bank
AKN	Aga Khan Network
BOKU	University of Natural Resources and Life Sciences
CACILM	Central Asian Countries Initiative for Land Management
CARE	Cooperative for Assistance and Relief Everywhere
CBNRM	Community-based Natural Resource management
CBO	Community-based Organization
CDS	Country Development Strategy
CSO	Civil Society Organization
DFID	Department for International Development
DRR	Disaster Risk Reduction
EC	European Commission
EU	European Union
FAO	Food and Agriculture Organization
FUG	Forest User Group
GBAO	Gorno-Badakhshan Autonomous Oblast
GDP	Gross Domestic Product
GESI	Gender Equity and Social Inclusion
GTZ	Gesellschaft für Techniche Zusammenarbeit
HFA	Hyogo Framework for Action 2005 – 2015
HWA	Hilfswerk Austria International
ICIMOD	International Centre for Integrated Mountain Development
IDS	Institute for Development Studies
IKE	International Key Expert
INRM	Integrated Natural Resource Management
JFM	Joint Forest Management
M&E	Monitoring and evaluation
MDGs	Millennium Development Goals
MRI	Mountain Research Initiative
MSDSP	Mountain Societies Development Support Programme

NAPCD	National Action Plan to Combat Desertification
NAPs	National Action Plans (NAPs)
NDS	National Development Strategy
NGO	Non-governmental Organization
NPF	National Programming Framework
NRM	Natural Resource Management
OECD	Organisation for Economic Co-operation and Development
PAMIR	Poverty Alleviation by Mitigation of Integrated high-mountain Risk
PAR	Participatory Action Research
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Plan
R&D	Research and Development
SDC	Swiss Agency for Development and Cooperation
SFM	Sustainable Forest Management
SLM	Sustainable Land Management
SLNRM	Sustainable Livelihood and Natural Resource Management
SMLM	Sustainable Mountainous Land Management Model
SPNA	Specially Protected Nature Areas
UNCCD	United Nations Conventions to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
WB	World Bank

Chapter 1

The study report has been prepared as a part of the **Poverty** ***Alleviation through Mitigation of Integrated high Risk (*****PAMIR*****)*** project and analyzes the existing policy provisions and development of national initiatives and strategies of sustainable livelihood and natural resources management that can enhance and contribute to disaster risk reduction, poverty reduction, sustainable land use and forest management and environmental sustainability of Central Asia in general. Hilfswerk Austria international (HWA) has been working in Tajikistan since 2001 as a humanitarian support and is currently implementing a European Union (EU) funded project with its implementing partners PAMIR project (University of Natural Resources and Life Sciences (BOKU), FOCUS Humanitarian Assistance (Affiliate of Aga Khan Network), Tajikistan/Afghanistan and Mountain Societies Development Support Programme (MSDSP) in Kyrgyzstan (Affiliate of Aga Khan Network). In the Pamir region, several other organizations are working to promote sustainable development and reduce poverty with incorporating mountain perspectives and in doing so, increase community resilience. Therefore, the study also contributes to identifying the elements of sustainable livelihood and natural resource management and the way in which the interaction with the help of stakeholders' perception is structured. The study also contributes to a coherent debate about the many factors that affect Disaster Risk Reduction (DRR), Forest Management, Land Use, Biodiversity and Pasture Land Management, Environment Management, Livelihood promotion and Co-operation, Co-ordination and other cross-cutting issues. The other objectives of the study are to recommend strategic entry points, to support natural resources management and livelihood at the regional level (country specific) and to provide a proposal and a recommendation for Sustainable Livelihood and natural resources management in the regional context which will help to develop and agree on next steps during the upcoming regional conference, Aug, 2013.

In this context, the report has been focusing on facilitating and developing the national action plans (NAPs) for disaster risk reduction, poverty reduction and environmental protection in Afghanistan, Kyrgyzstan and Tajikistan in the framework of ***Sustainable Livelihood and Natural Resources Management.*** Three countries (Afghanistan, Kyrgyzstan and Tajikistan) were selected to conduct studies and identify useful information for the development of national standards in the framework for sustainable livelihood and natural resources management. The specific objectives of the study were to gather ideas, information and

feedback from the experts, determine the extent of consensus among the survey participants , and to establish the priority or importance assigned to each of the items/issues (hereafter indicators) related DRR; Forestry, Land Use, Livelihood for each country. This process was made possible thanks to the participation of diverse groups of stakeholders at the national level, especially the scientific community, experts, researchers, government officials and the members of civil society.

In order to identify the key recommendations on sustainable livelihood and natural resources management, several face-to face meetings and one national workshop among the key stakeholders in each country were organized. The purpose was to share information and knowledge as well as to develop the study methodology and common approaches for addressing all three dimensions: poverty reduction, disaster risk reduction and environmental sustainability. The research ideas and the methodology were discussed at a preparatory meeting held in Dushanbe on December 2011 and Bishkek on January 2012. The detailed research design and the plan for the desk study were reviewed and the Delphi survey was shared at an expert meeting held in Vienna from 18 to 20 April, 2012. The Delphi survey was conducted between June and Nov 2012 and preliminary findings of the study were presented in the national workshop which was held in Osh, Kyrgyzstan (Aug 2012), Dushanbe, Tajikistan (Sep 2012) and Kabul, Afghanistan (Dec 2012). This document is now being circulated among the project co-ordinator and all project team leaders for their genuine inputs, comments, insights and observations concerning the study.

During the 14 months of the implementation period, including 40 days consultancy job, the activities were organized in four different phases as shown below:

Phase	***Main tasks addressed***	***Period***
Phase I	Field plan and design of the study	Oct-Nov, 2011
Phase II	Desk study, developing study methodology and face to face meeting with stakeholders and project staff workshop	Nov 2011 to Jan 2012
Phase III	Details concerning the development of the survey questionnaire and methods discussed in expert-meeting and scientific forum. Finalizing the details for the Delphi survey procedure and questionnaire	Apr-May, 2012
Phase IV	Conducting the Delphi survey and presenting the preliminary finding at a national workshop	June to Dec, 2012
Phase V	Analysis and write up of the reports for each country	Jan-March, 2013

Phase I

With PAMIR staff, the experts (IKE) prepared a preliminary methodology based on the available information and national strategies and actions plans for poverty reduction, disaster risk reduction and forest and land use management in Afghanistan, Kyrgyzstan and Tajikistan. Under the supervision of project co-ordinator, one consultant was recruited and three working groups in each country were proposed to assist and guide the study. The preliminary Delphi survey methodology was presented in Tajikistan and Kyrgyzstan and discussed for further development in phase II.

Phase II

The study team conducted office visit and face- to face- meetings with policy makers and experts, who are directly working in the field of DRR, Poverty Reduction Strategy Programme (PRSP) and Sustainable Forest Management (SFM), to get ideas and identify the major areas of concern in formulating the Delphi questionnaire and personal commitment, as well as to obtain feedback for supporting the research survey. The team met more than 30 experts from two countries personally and received their ideas and shared the study methodology along with the conceptual recommendations for the development of national action plans. The stakeholders' meetings and office visits offered the partners opportunities to share information about the PAMIR project and the preliminary finding and activities. They enabled information exchange regarding the possibilities for the widespread practice of project initiative in developing the regional strategy in Central Asia.

Phase III

Additionally, the methodology of this study was shared in an expert meeting/PAMIR project, April 18-20, 2012, Vienna, Austria and MRI Key Contact Workshop Meeting, 21 April 2012, Vienna, Austria. It was a rigorous discussion in small groups with scientists' related methodological parts. The final Delphi questionnaire along with the evaluation criteria was fixed, based on the received feedback. The meeting with scientific team helped improve the rating scale of indicators and provided scientific validity and more practical means.

Phase IV

The main idea of the proposed Delphi Survey was to initiate the national process of developing national action plans for DRR, PRSP and sustainable natural resources management for each country. The task team members for Delphi study consisted of

international key experts, team leaders for the three countries, HWA country representatives, Dushanbe and formed three study committees with members from each country. Being a country coordinator from Delphi, the team leader of PAMIR project collected and updated the list of representatives of science, government authorities, and stakeholders from different disciplines constituting the experts' panel. Members of the Delphi study were invited to participate in the study based on a screening of their individual knowledge and experience. The Delphi panel used a five-choice Likert scale (e.g. 1=very low applicable, 5 =very high applicable) for assessing the applicability and overall importance of each indicator with respect to the national, regional and local level.

Table 1 shows the total of 104 respondents (23 from Afghanistan, 28 from Kyrgyzstan and 53 from Tajikistan) including more than 35% females and consisting of representatives of government (38%), international and non-governmental organizations (48%), universities (6%) and associations (9%). Out of the 104 respondents, experts from the natural resource management sector were in the majority, making up as much as 33%. Of the rest, 18% had an environmental background, 14 % represented social sciences, 10 % were experts in economics, 6% represented politics and 20 % were categorized as coming from politics and other areas.

Table 1: Respondents of Delphi survey from three countries (Source: Delphi survey, 2012)

Gender	**Afghanistan**	**Kyrgyzstan**	**Tajikistan**	**Total**
	Received Responses	**Received Responses**	**Received Responses**	
Female	5(21.7%)	12 (42.86)	19 (35.8%)	36 (34.6%)
Male	18 (78.3%)	16 (57.14%)	34 (64.2%)	68 (65.4%)
Affiliation	**Received Responses**	**Received Responses**	**Received Responses**	**Received Responses**
Government	2 (8.7%)	6(21.43%)	31(58.5%)	39 (37.5%)
I/NGOs	18 (78.2%)	15 (53.57%)	17 (32.1%)	50 (48.1%)
University	2 (8.7%)	4 (14.29%)	0	6 (5.8%)
Association	1 (4.3%)	3 (10.71%)	5 (9.4%)	9 (8.7%)
Expertise	**Received Responses**	**Received Responses**	**Received Responses**	**Received Responses**
NRM	3 (13%)	9(32.14%)	22 (41.5%)	34 (32.7%)
Environment	2 (8.7%)	7(25%)	10(18.9%)	19 (18.3%)
Social science	4(17.4%)	3 (10.71%)	7 (13.2%)	14 (13.5%)
Economics	3 (13%)	1(3.57%)	6 (11.3%)	10 (9.6%)
Politics	4 (17.4%)	1(3.57%)	1 (1.9%)	6 (5.8%)
Others	7 (30.45)	7(25%)	7 (13.2%)	21 (20.2%)
Total	**23 (100%)**	**28(100%)**	**53 (100%)**	**104 (100%)**

Phase V

The key findings and outputs of the study were developed based on the analysis of the Delphi survey and policy documents. The Delphi questionnaire has been developed in a structured way and experts provided their personal views on each set of questions. The experts gave their assessments of the indicators, with a view on their importance to sustainable livelihood and natural resource management for proposed countries, as well as assessments of a multitude of related policy measures. The findings are based on the identified indicators for the applicability and importance of national, regional (Province and District) and local levels and feedback from the national workshop. The key elements in target countries concerning disaster preparedness and disaster management, forest management, land use and pasture management, environment management, livelihood and other cross cutting issues, especially framing, were identified. The MDG goals 1 (poverty) and 7 (environmental sustainability) of the PAMIR project were outlined. Developed and tested using practical methodology (hereafter Delphi survey) they are carried out to assess the applicability and importance of measuring elements linked with the development of natural resources and disaster risk management policies and finally to assess and outline the extent to which national action plans should be given high priority as policy options.

KEY FINDINGS

Firstly, the identification of a restricted set of indicators which address livelihood, poverty, disaster preparedness and management, sustainable forest management and land use practices was required. These indicators needed to be linked explicitly to an analytical framework linking natural resources use to rural livelihoods in order to be used for recommendations for National Action Plans. They must also had to offer realistic prospects of being systematic, measurable and practical in sustainable natural resources management and improvement of livelihoods of Central Asia, particularly in the case study countries (Afghanistan, Kyrgyzstan and Tajikistan).

Secondly, the set of indicators had to be assessed in the three countries, understood to be in a more or less homogeneous agro-ecological or climatic zone of Central Asia each of countries having contrasting legal, social, political and economic endeavors. We have developed a common set of indicators and employed the Delphi survey to assess the set of indicators covering a wide range of natural resources and livelihood management contexts for evaluation of the applicability and importance of sustainability indicators at different geographical

scales: National, regional (Province and District for Tajikistan and Kyrgyzstan and Provincial and District for Afghanistan) and local. All the diverse groups of stakeholders and individuals provided their opinions, views and perceptions by giving their preferences for recommending the national action plans.

The study identified several problems/issues, activities and recommendations for each indicator that have hindered risk reduction and early warning initiatives, livelihood promotion, sustainable forest and land use management, environment management, ecosystem management and regional co-operation related to identification of regional agendas, trans-boundary co-operations and human and natural resources. The identified issues related to improving policies and legal frameworks, improving DRR processes , forestry, biodiversity, land use practices, pasture land management, poverty, improving data and joint research efforts, fund allocation, hazard and risk identification, forecasting, modeling, the role of underlying risk factors (underlying vulnerability), improving monitoring and evaluation systems, using rights and equitable distribution, social justice, resource governance, the perennial issue of preparedness, livelihood promotion and environmental management are described.

CONCLUSIONS

In this study, we categories the 52 identified indicators into six categories : 1) Disaster Preparedness and Management, (2) Forest Management, (3) Land Use, Biodiversity and Pasture Land Management, (4) Environment Management, (5) Livelihood Promotion and (6) Co-operation, co-ordination and other Cross-Cutting issues. It is evident from the findings of the study that more than 30 indicators were judged as highly important and most of them were highly applicable under the criteria 5 (Livelihood Promotion) and Criteria 6 (Co-operation, co-ordination and other cross-cutting issues). In total, more than 35 indicators at national level, 39 indicators at Oblast level, 27 indicators at Rayon and 14 indicators at local level were found more applicable. The study recognized the concept of natural governance system. Particularly the rights, roles and responsibilities of diverse actors, were recognized as problematic calling for appropriate and meaningful indicators developed through rigorous discussion with stakeholder from the beginning of the planning process. Therefore, these findings and conclusions can be considered as an essence to re/formulate and support the discussions on existing policy processes as well as on new policy instruments for application in Central Asia and is based on the joint agreed vision, goals and action priority of respective

countries and stakeholders. It is concluded that the political will and governance system is essential to implement and address the overall goal of sustainable livelihoods and natural resources and deal with complex issues of policy development and decision-making.

Delphi questionnaire was set up based on the existing policy and strategy documents of each country but it was hard to judge and specify indicators or strategies with the highest importance in the specific countries. Although a structured questionnaire was provided in the Delphi process, some respondents made quite different interpretations and objected to specific questions/indicators, the use of terminologies or phrases in definitions of the terms as well as the lack of 'described' definitions. The weaknesses of Delphi studies included the fact that they require much time and pose difficulties regarding coordination and communication for consensus building among experts. Most of the national strategies and plans were developed without proper design to monitor the implementation mechanisms, therefore there was not enough evidence to demonstrate that the common framework for developing strategy should be included in national strategy plans. It is suggested to develop a common framework and monitoring mechanisms for the implementation strategies. A periodic assessment must be carried out.

RECOMMENDATIONS

The NAPs should follow the guidelines of several Environment/forestry/Social/DRR related government and non-governmental organizations, NGOs, CSOs and CBOs to formulate their activities and plans. This action plans also encourage the development of national action plans on DRR, forest management, land use, biodiversity, pasture land management, livelihood, environment management through a multi-layer and multi-stakeholder consultation process. It is recommended to identify the regional agenda with high priority in each country and to promote regional co-operation through high-level consultation process. The national co-ordination and expert-led team should be formed, in order to create a high-level trust and facilitate the implementation, and prepare integrated plans or frameworks to support the sustainable natural resources management and livelihood. The national action plans should be focused and carried out over the next decade. Integrated global and national initiatives that aim at enhancing the management and use of resources, sustainable land user practices, participatory forest management, disaster preparedness and disaster risk management, and consider afforestation and reforestation concepts/strategies are a way to improve livelihoods and sustain natural resources management.

Future strategy programme should be based on trans-boundary, biodiversity management, Sustainable Mountainous Land Management Model (SMLM) and climate change adaptation, social afforestation and reforestation strategy, community-based forest management strategy: e.g. Joint forest management or community participation in forest management. The recommendations for specific countries have been described in details in section 4.5 and 5.2 of this report. The general recommendations for developing the national action plan on SLNRM are to

- Revise/refine the current disaster risk management, PRSP, Environment, Forestry, Land Use policy, strategies and action plans in partnership with relevant stakeholders to increase ownership and to make it more effectively implementable.
- Focus on both research and development in the participating countries to take this initiative further. Conduct collaborative and multidisciplinary research with a clear focus on livelihood development and policy issues in relation to poverty and vulnerability in mountain areas.
- Identify and test the NRM and livelihood related policy questions to build a common understanding and solve the problems in an iterative and adaptive process. Identify future directions and develop a vision, mission, goals and strategies and focus on the needs of Central Asian member countries, adjust strategies taking changing circumstances into account.
- Periodic monitoring and assessment of programme priorities and resources allocations in line with national plans such as PRSP, Biodiversity conservation strategy, Sustainable land use plan, national forestry sector plan in order to ensure effective implementation in the specific areas.
- Develop networking for regional capacity building, and policy and institutional support, capacity for sustainable livelihoods in border regions and tackle, through developing environmental processes and adaptation strategy, the promotion of cultural conservation, sustainable economic development, sustainable mountain tourism and income generation activities, issues of governance, policies, institutions, gender, and equity concerns.
- There still remains an urgent need for systematic research on the linkages between environmental stewardship, sustainable land use management, watershed management and risk reduction strategies, regional conflicts and stability in Central Asia as part of a regional environmental agenda. The cross-border initiatives and regional cooperation

on natural resources management that recognize the need to preserve something for the future should be built.

- Develop an appropriate and publicly available information dissemination system related to policies, legislation, directives, executive orders, relevant publications, data, programmes and projects at the center and in the districts.

Furthermore, the national action plans should consider both upstream and downstream population of the mountain area, which may appear more technical in nature, but is believed to lead to secure livelihood and well-being of the people of the area, while protecting their right to life and property.

FORWARD

This report is intended to support and highlight the recommendations for sustainable natural resources management (NRM) and livelihood activities corresponding to work package 5 of PAMIR project. It tries to:

- Suggest ways to improve livelihood options and sustainable natural resources management in three countries.
- Clarify the concepts of livelihood strategies and natural resources management and poverty reduction.
- Identify the key indicators at different geographical scales according to their applicability and importance.
- Identify the details of problems/issues, activities and recommendations against all indicators judged as highly applicable and important in the Delphi survey.
- Provide general conclusions and recommendations and also specify recommendations for each country.

The recommendations of National Action Plans, illustrated by PAMIR project's experiences, stress the need to emphasize the mountain ecosystem and services to link the livelihood strategies and enable the environmental sustainability through assessing, designing, implementing and monitoring elements of livelihood and NRM in the regions. The study also supports the relationship between natural resources use and management and rural livelihood options through reviewing sustainable livelihood approaches and outlining the recommendations for the development of national action plans for sustainable NRM and livelihood activities. Some conclusions and policy implications relevant at all levels and to a variety of different actors were highlighted:

- Absolute clarity, defined terminology and more description is needed to clarify how different concepts and definitions of Disaster Risk Management, Forest Management, Land Use, Biodiversity and Pasture Land Management, Environment and Ecosystem Management, Livelihood and Regional co-operation issues are being used and interpreted in different contexts to ensure that complex dynamic and cross-cutting issues are not confused and misrepresented.
- Greater policy attention to how livelihood and natural resources management strategies can help prevent poverty, natural disaster, forest and environmental degradation would be valuable. In many cases policy contribution to livelihood promotion, disaster risk reduction, forest, land use, environment and ecosystem management has been tended to be overstated but its major contribution to livelihood enhancement has been somewhat overlooked.
- The action plans should ensure the interests, perceptions, indigenous knowledge and innovation and access for poor people in order to use, protect and manage the resources on which they depend and put in place policies to conserve the components of livelihood and natural resources management on which poor people's resilience is based to contribute to poverty reduction.

REPORT STRUCTURE

The report is organized in five chapters, which outline essential components of national strategies and action plans for sustainable natural resources management and livelihoods. These essentials include key concepts, strategies, issues, study methods and recommendations that build on the directions set up for poverty reduction, disaster risk reduction, and NRM and livelihood activities. In the first chapter, the executive summary, key findings and way forward based on the findings of study is presented. The detailed approach, case studies methodology including the background, context of the project and the challenges of the research are described in Chapter 2. The general framework of sustainable Livelihood and Natural Resource Management are described in Chapter 3. The findings for each country are described in Chapter 4, which also includes the description of major strategies and action plans and more detailed analysis of strategies for sustainable livelihood and natural resource management and its problems, activities and recommendation in relation to the six identified criteria: Disaster risk reduction, Forest Management, Land use, Biodiversity and Pasture land management, Environment Management, Livelihood and Co-operation, collaboration and

other cross-cutting issues. Conclusions, recommendations and policy implications of the study are discussed in Chapter 5.

Chapter 2

INTRODUCTION

Sustainable development includes a number of interdependent elements and attributes including social, economic, political, natural resources, equity and environmental. The unifying theme of sustainable development was central to the Rio Declaration signed by 178 countries at the United Nations Conferences on Environment and Development held in Brazil in 1992. Agenda 21, the Programme of Action of the Conference, calls for countries to formulate and adopt notational strategies for sustainable development and to achieve the institutional and resource-based changes for long-term development. In doing so, a number of policies, approaches and strategy plans were recognized as essential requirements. The member countries are developing for taking action on sustainable natural resources management, livelihood, poverty reduction, disaster risk reduction/disaster risk management and environment management in Central Asia, however it is questionable whether it is donor-driven or demand-driven. It has demonstrated the lack of common understanding and comprehensive picture of existing plans and identified the gap in understanding among stakeholders regarding increasing effectiveness and integration of the following components: livelihood, forest/land use management, disaster risk reduction and natural resources management. Some studies substantially support the examination and integration of the linkages between poverty and environment, disaster and poverty, forestry and livelihood options and highlight the emerging issues, challenges and opportunities. It is a rather less consultative stakeholder process of formulating the plan and strategy to integrate environment and disaster risk reduction dimensions. Moreover, there are still no clear road maps for entry points including a better understanding of the social-cultural context and real problems in specific contexts. Therefore, the study supports formalization, reproduction and a comprehensive and transparent process of policy planning for sustainable livelihood and natural resources management. In each country, the demand for multi-disciplinary and multi-stakeholder approaches may enhance the multiple interactions in developing and formulating the national action plans.

Against this background, the **P**overty **A**lleviation by **M**itigation of **I**ntegrated high-mountain **R**isk (PAMIR) -EU funded project aims to generate and appraise knowledge about the linkages between environment, disaster risk and poverty in selected communities alongside the Pyanj river (Tajikistan/Afghanistan) and Chang Alai valley (Tajikistan, Kyrgyzstan). It

aims to increase resilience of mountainous communities to geo-hazards and to provide a platform for negotiating strategies for integration of environmental sustainability into policies among stakeholders of all levels, creating awareness on causes and effects of un-sustainable environment and disseminating knowledge on efficient interventions. The aim of the study was to analyze the existing policy provisions and development of national initiatives and strategies for sustainable natural resources management and livelihood that can enhance and contribute to poverty reduction and environmental sustainability.

The PAMIR project has initiated a series of studies on working packages relevant to the poverty reduction, forestry sector, climate change, disaster preparedness and disaster management plan including: a) Mountain Geo-Risk Assessment Model, b) Sustainable Mountainous Land Management Model (SMLM), c) policy and institutional arrangement and land-use dynamics and tenure system, d) Bio-physical assessment and feasibility of Afforestation in the Pamir regions, and e) Socio-economic and Vulnerability and Climate impact assessment. In order to support the PAMIR project and develop policy recommendations on effective and multi-dimensions measures, it was necessary to work on the recommendation for developing sustainable natural resource management and livelihood focusing on linkages between disaster risk, environmental degradation and poverty, which has been carried out under work packages 5: increased awareness on linkages between environmental protection, DRR and livelihood among political decision-makers and donor agencies through implementation of sharing processes.

This study presents the methodology used for the case studies on the sustainable natural resources management-livelihood linkages in Afghanistan, Kyrgyzstan and Tajikistan to initiate and accommodate the views of policy makers, development agencies, and stakeholders. The proposed methodology provided a sound and objective basis for information and knowledge sharing among the stakeholders. The findings and the recommendations can be widely disseminated to foster regional cooperation. The study represents a part of the regional approach to integration of DRR and environmental protection for sustainable poverty reduction and environmental sustainability in Pamir region, Central Asia.

APPROACH AND METHODOLOGY OF THE STUDY

2.1 Background

The Pamir Mountains are an extremely isolated high-mountain region which is located at the crossroads between China to the east, Afghanistan to the west, Pakistan to the south, and Kyrgyzstan to the north. It is highly susceptible and well-known as fragile ecosystem in Central Asia with several environmental problems and facing poverty issues. The main reasons due to irrational use of natural resources and subsequent degradation of ecosystem, shrinking forests, degrading agriculture lands which impact and threat of growing social and ecological vulnerability from climate change and loss of bio-diversity. Such negative impacts and natural disturbance ultimately affect sustainable livelihood for the current and future generations. These negative environmental and poverty conditions have recently become global issues and challenges, which are affecting everyone in all corners of the world, causing more frequent and destructive natural disasters, such as erosion, landslides, avalanches and floods. To address these challenges the world's governments committed themselves at the United Nations Millennium Summit to the Millennium Development Goals (MDGs), including an overarching goal of halving extreme poverty and environmental sustainability by the year 2015. In order to promote sustainable development in the Pamirs, facing great challenges from the political, economic, social and ecological perspectives, Hilfswerk Austria International has been working in Tajikistan since 2001 as a humanitarian support and currently is implementing the EU funded project entitled 'Poverty Alleviation through Mitigation of Integrated high Risk (**PAMIR**) in collaboration with the University of Natural Resources and Life Sciences (BOKU), FOCUS Humanitarian Assistance (Affiliate of Aga Khan Network), Tajikistan/Afghanistan, Mountain Societies Development Support Programme (MSDSP) in Kyrgyzstan (Affiliate of Aga Khan Network).

In this context, the governments of the Islamic Republic of Afghanistan, Republic of Tajikistan and Kyrgyz Republic have ratified the MDGs and major international environmental, DRR and poverty reduction obligations and international and sub-regional initiatives which enhance sustainable livelihood and natural resources management. To tackle the environmental degradation and reduce poverty, several strategies and action plans along with relevant documents have been developed in each country (e.g. Country Development Strategy (CDS), Poverty Reduction Strategy (PRS), Disaster Risk Management Strategy,

Environment and Natural Resource Management, National Action Plan for Forestry and several other national action plans).

First, the documents were developed following intensive discussions within the PAMIR project team and comments and feedback were compiled. The study referred to the on-going policy documents, international and national initiatives, which have then been assembled. The standard set of questionnaires on the importance and linkage of livelihood, disaster risk reduction, poverty reduction, environmental and natural resources management was translated in order to gather the ideas and personal views of experts, who are working in respective scientific disciplines. The main purpose of the study is to point out significant policy opportunities and give recommendations for moving the sustainable livelihood and natural resources management agenda forward. In order to do so, the methodological report for developing National Action Plans on Sustainable Livelihood and Natural Resources Management was created and presented at the regional steering committee meeting which was held in March, 2012. The participants highly appreciated the methodological concepts and suggested to recommend the elements of sustainable livelihood and natural resources management instead of developing national action plans.

The study has the following specific objectives:

- Identify the relative significance and the important indicators of sustainable natural management and livelihood promotion, as well as the way of interaction based on the stakeholders' perception obtained through a structured and coherent debate about the many factors that affect livelihood, poverty reduction and disaster risk reduction.
- Recommend strategic entry points to support natural resources management and livelihood at the regional level and country specific.
- Provide a proposal and recommendations for natural resources management and livelihood promotion in the regional context, which will help to develop the agreed next steps at the upcoming regional conference, Aug, 2013.

In this context, this report has been prepared as part of the PAMIR project for facilitating and developing the national action plans for disaster risk reduction, poverty reduction and environmental protection in Afghanistan, Kyrgyzstan and Tajikistan in the framework of ***Sustainable Livelihood and Natural Resources Management.*** Three countries (Afghanistan, Kyrgyzstan and Tajikistan) were selected to conduct studies and identify information needed

for the development of national standards in the framework of sustainable livelihood and natural resources management of each country: Afghanistan, Kyrgyzstan and Tajikistan. The specific objectives of the study were to get ideas, information and feedback gained from experts, and to identify the extent to which consensus among survey participants emerged, as well as the priority or importance assigned to each of the items/issues related DRR; PRSP and sustainable natural resources management for each country. This process was made possible thanks to participation of diverse groups of stakeholders at the national levels, especially members of scientific community, experts, researchers, government officials and civil society. With the aim of preparing a methodology approach for developing NAPs, the project team and team leaders jointly discussed and shared information on the on-going development in the fields ranging from reducing vulnerability to the risk of disasters within the context of the country development plan and strategy for poverty reduction plan and sustainable forest management e.g. Disaster Risk Management Initiative, which is in line with the Hyogo Framework for Action 2005-2015 (HFA), PRSP-UNDP supported plan and country strategy plan for forestry sector, sustainable land management model etc. The team also discussed all the project activities which can be incorporated based on the experiences of the project e.g. the feasibility study on social afforestation as sustainable mitigation measure, the policy framework studies, the database of structural mitigation works developed as a result of the Hazard and Social Vulnerability Risk Assessment for Natural Resources Management for 120 villages in Tajikistan, Afghanistan and Kyrgyzstan. The research methods were developed in a participatory manner with input from the project partners, policy makers and donor organization.

2.2 Methodological approach of the study

Workshop: Concept and Development of Methodological approach

The team leaders of the workshop, which was held in Tajikistan on 25-26, Nov 2011, as well as the stakeholder groups meeting held in Nov-Dec, 2011, proposed the research methodology and recommendations for developing the national action plans . It was proposed to form a study team in each country and brought forward an idea to purposely incorporate the diverse views, opinion, judgment and experiences of experts and stakeholders against each set of indicators for sustainable livelihood and natural resource management into the study method. In this context, the Delphi survey and its details methodological process were discussed and it was agreed to conduct the survey to assess a set of generic Criteria and Indicators (C&I) with regard to the applicability and importance of national, regional and local context. The study

team and project team discussed the feasibility from a methodological point of view and its practicality to encourage the participatory process. In general, the expert-led (Top-down, Delphi Survey) approach was designed whereas the proposed methodology identified the role and participation in the action of the various stakeholders and their involvement in developing the national action plans for each country.

Face to face meeting with policy makers and experts groups

The discussion with the several policy makers and expert groups had a purpose of ensuring the adoption of PAMIR project results which would possibly enhance livelihood and natural resources management through information sharing process and integration of the knowledge about environmental protection, DRR and Livelihood among political decision-makers and donor agencies in the project countries. In order to discuss and share the ideas of the research study proposal, the team members conducted face-to face meetings with several organizations and their personnel and increased the capacity of negotiating strategies on integration of livelihood and resources management into poverty reduction among stakeholders. The research team met more than 30 experts from two countries Tajikistan and Kyrgyzstan to share the research concept for developing the NAPs and has received their ideas and feedback . Consultation and engagement of diverse stakeholder groups was essential for the development of future strategies incorporating the major issues in integrating three major components: DRR, PRSP and SFM.

2.2.1 Delphi survey study and set of criteria and indicators

The task team for Delphi study consisted of international key expert, team leaders for the three countries, country representatives of HWA, Dushanbe and the international coordinator of PAMIR project and formed three study committees with members from each country. Being a Delphi country co-ordinator, the team leader of PAMIR project collected and updated the list of expert panel members consisting of representatives of science, government authorities, and stakeholders from different disciplines (Table 2). The study team and expert panel consisted of representatives of science, government authorities, and stakeholders from different disciplines. The objective of the study was to identify useful information for the development of national standards in the framework of sustainable livelihood and natural resources management for each country: Afghanistan, Kyrgyzstan and Tajikistan.

The Delphi method is based on a structured process of collecting and distilling knowledge from groups of experts by means of a series of questionnaires interspersed with controlled opinion feedback (**Khadka and Harald 2012**). The questionnaires designed to elicit and develop individual responses to the problems posed and to enable the experts to refine their views with the group's work progresses and the option to discuss the findings at the round table meeting. The experts provided their assessments on criteria and indicators, with a view to their importance for mountain societies in proposed countries, as well as assessments on a multitude of related policy measures.

A Delphi methodology has been selected as the most appropriate means to achieve the goals and objectives of the research because it provides a way to solicit and gain experts' consensus on an emerging issue while ameliorating problematic group processes such as bias and pressure (**Hasson et al. 2000, van Zolingen and Klaassen 2003, Landeta 2006**). We applied five features of the Delphi method: anonymity (experts are unknown to each other and nameless), iteration (feedback given at least twice), controlled feedback (appreciation of new ideas), statistical measures (aggregation of individual preferences) and convergence (multiple reverse feedback and final results) (**Khadka and Vacik 2012**). The Delphi process involves: expertise and/or specialization of selected respondents in the subject matter being considered, a process of multiple iterations or repetitions and providing controlled feedback to the experts enabling the experts to reflect and interact via the questionnaire instrument, limiting extraneous information, and insuring anonymity. As the Delphi process is an anonymous one, it has advantages over the normal unmediated face-to-face interactions between participants as the usual problems of group dynamics are thus completely bypassed (**Stewart et al., 1999**).

Table 2: The study team members for the Delphi study, Tajikistan

Name	Office Address	Responsible	Email Address
Chiranjeewee Khadka	BOKU University, Austria	Study co-ordinator	Chiranjeewee.khadka@boku.ac.at
Task team, Tajikistan			
Ms. Rukhshona Broimshoeva	Focus Humanitarian Assistance	Delphi study co-ordinator	rbroimshoeva@focushumanitarian.org
Mr. Umed Aslanov	Hilfswerk Austria International	Member	aslanov@hilfswerk.tj
Ms. Gulnaz Jalilova	Hilfswerk Austria International	Member/study assistant	gulnaz.jalilova@hwa.or.at
Steering committee, Tajikistan			
Mr. Abdusalom Makhmadaliev	Department of Geology under the government of Tajikistan	Member	m.e.abdusalom@mail.ru
Mr. Bozor Rahmonov	Committee on Environmental Protection inTajikistan	Member	
Ms. Svetlana Jumaeva	Center for Climate Change	Member	svetlana.jumaeva@gmail.com

	and Disaster Reduction, Tajikistan		
Study secretariat			
Ms. Muazzama Marufi	Hilfswerk Austria International in Tajikistan	Secretary	moya_jona@yahoo.com

2.2.2 Study methods and research process

The respondents comprising representatives of government, international and non-governmental organizations, universities, associations, research institutions and freelancers took part in the study. To avoid response bias associated with the interview, the questions were reviewed carefully to avoid misunderstandings and failures based on poor wording. The study kicked-off by June 2012 and at least around 200 experts were contacted in the first round of e-mails from three countries. We did not presume to have generated a complete list of experts as the only suitable respondents for the Delphi process. For example, we first contacted, acknowledging the boundaries and limitations of the system, only those with access to electronic mail and possibility to provide their personal views on the elements. As this kind of survey is quite new in Central Asia and some of experts have no internet access, we provided them with printed questionnaires in order to overcome the technical problems and increase the number of respondents. The total of 104 respondents (23 from Afghanistan, 28 from Kyrgyzstan and 53 from Tajikistan) replied and most of them participated in the national workshop to provide their final inputs. An invitation letter, materials about Delphi background as well as Delphi questionnaire form were sent to all listed individuals by the Delphi coordinators of each country. Delphi coordinator sent out the set of Delphi survey documents (in order: Official request letter_1, Background report_2, List of indicators_3, Personal details of expert_4, Delphi questionnaire_5, see details in **Appendix 2** (both English and Russian Version) to all listed individuals by 7th June, 2012. In order to achieve common understanding, we have discussed each element of the questionnaire set within the study panel. In the beginning, 82 indicators were formulated for pre-testing. They were later refined and developed into 52 indicators comprising the final set for the survey. The research team did not collect specific characteristics of individual respondents to fulfill ethics and confidentiality requirements. Additional research, examining the gaps in policy and its implementation strategy, was analyzed for the scope of this study. All elements which are identified by the experts as 'very important' or "important" were discussed at the national workshop with the purpose of finalizing a national set of recommendations for the national action plans.

All the experts were supposed to respond to the close-ended questions, and the information received was compiled according to question number for each country in a SPSS data base. The statistical package for the Social Sciences (SPSS, version 17) was used for data analysis, which helped to generate descriptive statistics for all the items. As the significant outcome of this process was documented, an extensive list of responses from the experts corresponding to each question was developed.

Following the completion of the study, the results of the study were presented at a national workshop on Sustainable Livelihood and natural resources management. The resulting dialogue has enriched the interpretation and the understanding of the outcomes of the Delphi process, and is therefore, reflected upon in the results and identified in the general recommendation for national action plans for each country. To receive reliable results, anonymity, iteration, controlled feedback and statistical aggregation of group responses are key factors (**Wolfslehner et al., 2003**). Two rounds are usually sufficient to achieve consensus (**Rowe et al., 1991**). The final national workshop on sustainable livelihood and natural resources management supported the C&I process for incorporating and integrating the dimensions of DRR, PRSP and SFM.

2.2.3 Desk study review

In this study, we reviewed and referred to a selected set of indicators based on the policy documents and internationally negotiated national initiatives based on existing action plans/strategies in the field of Natural Resources Management, Poverty Alleviation, Disaster Risk Reduction, Country Development, Biodiversity Conservation and Forestry management plan, Land Use Management and other related Action Plans in the three countries. At the end, the study identified the key elements of SLNRM by consulting and meeting governmental and non-governmental organizations at national levels and reflecting on the activities of pilot studies. Basically, we referred the following documents:

1) National Disaster Risk Management Strategy (2010 – 2015), Republic of Tajikistan.
2) National development strategy of the republic of Tajikistan for the period to 2015.
3) Poverty reduction strategy of the republic of Tajikistan for 2010–2012.
4) National Programming Framework, Republic of Tajikistan, Central Asian Countries Initiative for Land Management.
5) Strategy and Action Plan for sustainable land management in the high Pamir and Pamir-Alai Mountains.

6) National strategy on integrated safety of population and territories of the Kyrgyz Republic in disasters and emergencies for 2011-2015.
7) Kyrgyzstan: Environment and Natural Resources for Sustainable Development. – B. 2006, 85 p. ISBN 9967-23-868-2.
8) National Forestry Program for the period from 2005-2015, Kyrgyz Republic.
9) National Action Plan for Development of Forestry of the Kyrgyz republic in the period from 2006 to 2010.
10) Concept of forestry sector development in the Kyrgyz Republic.
11) Risk assessment for Central Asia and Caucasus Desk Study Review, Central Asia and Caucasus Disaster Management Initiatives (CAC DRMI).
12) Country Development Strategy (2009-2011); Kyrgyz Republic.
13) Afghanistan National Development Strategy, Islamic Republic of Afghanistan.
14) Islamic Republic of Afghanistan: Poverty Reduction Strategy Paper, May 2008 IMF Country Report No. 08/153.
15) Linking poverty reduction and Environmental management: Policy challenges and opportunities, 2002.
16) Poverty reduction strategies and the millennium development goal on environmental sustainability: Opportunities for alignment, 2003.
17) United Nations Development Assistance Framework: In Support to the Afghanistan National Development Strategy, 2010 – 2013.
18) Islamic Republic of Afghanistan: Afghanistan National Development Strategy 1387-1391 (2008-2013); A strategy for Security, Governance, Economic Development and Poverty Reduction.
19) Islamic Republic of Afghanistan: Afghanistan's Fourth National Report to the Convention on Biological Diversity, Submitted by the Ministry of Agriculture, Irrigation and Livestock (MAIL), 2009.
20) Promotion of Sustainable Livelihood Programme, United Nations Development Programme Afghanistan Country Office, December, 2008.
21) Draft Country Programme Document for Afghanistan (2010-2013)
22) United Nations Development Assistance Framework: In support of the Afghanistan National Strategy, 2010-2013.
23) The Integration of Biodiversity into National Environmental Assessment Procedures National Case Studies Afghanistan, Produced for the Biodiversity Planning Support Programme by GEF, UNDP, UNEP, and the World Bank, 2001.

24) Biodiversity Profile of Afghanistan, An Output of the National Capacity Needs Assessment for Global Environment Management (NCSA) for Afghanistan; United nation Environment Programme Post-Conflict and Disaster Management Branch, 2008
25) Islamic Republic of Afghanistan: National Environmental Protection Agency Strategy for Afghanistan National Development Strategy (with focus on Prioritization), 2007.
26) UNEP in Afghanistan: Laying the Foundations for Sustainable Development, United Nations Environment Programme, 2009.
27) National Capacity Needs Self-Assessment for Global Environmental Management (NCSA) and National Adaptation Programme of Action for Climate Change (NAPA) of Afghanistan: Final Joint Report. February 2009: United Nations Environment Programme.

2.2.4 Information sharing and feedback

In order to identify the key recommendations for sustainable livelihood and natural resources management, several face-to face meeting and three workshops for the key stakeholders in each country were organized to share information and knowledge, to develop study methodology and common approaches addressing all three dimensions: poverty reduction, disaster risk reduction and environmental sustainability. The research ideas and elements of the methodology were discussed at a preparatory meeting held in Dushanbe on Dec 2011 and in Bishkek on January 2012. The details of the research design and a plan for the desk study review and Delphi survey were shared in expert meeting held in Vienna from 18 to 20 April, 2012. Additionally, the methodology of this study was shared at the PAMIR project expert meeting in April 18-20, 2012, Vienna, Austria and at the MRI Key Contact Workshop Meeting, 21 April 2012, Vienna, Austria. After the presentation, small groups including scientists provided constructive suggestions in order to improve the scientific validity and introduce more practical means such as:

- Balancing composition of respondents and number of experts;
- Likert scale (either 1 to 4 or 1 to 5 or 7);
- Communication skills and personal linkages and team work;
- Engagement of policy makers and dialogue between the stakeholders;
- Recommendation after identifying issues and problems of each element;
- Feedback mechanisms.

2.3 The challenge of synthesizing research

While study team members were developing and analyzing criteria and indicators and making recommendations for developing national action plans on the sustainable livelihood and natural resource management, poverty reduction, environmental sustainability and disaster risk reduction, they confronted the different stakeholders' values and the tradeoffs between different perspectives of stakeholders- had to be taken into account. However, it was the best way to identify the problems and make good decisions for evaluating the purposed set of indicators varying according to different geographical scales, socio-economic, political and ecological contexts. It also helped the comparison with the purpose of finding the similarities and dissimilarities and their applicability and importance at different geographical levels which has not been dealt with in this report. We found that the major challenges were to define the terms of measures across the scale, interpretation and analysis for the different disciplines. First, it was challenging for the study team to develop a comprehensive set of indicators for all levels and for the evaluation of the national and the management level as a whole. As suggested by the experts, developing indicators was based on the best and most current knowledge and, at the same time, had to be simple with the minimum set of indicators developed to be integrated into the existing management system and at national levels.

The perceptions and judgments of the stakeholders were competing and contradictory in their respective fields, affiliations with organizations and expertise. The trade-off between importance of indicators at national, regional (Provincial and District) and local levels and others had to be negotiated between different interest groups, otherwise open contradictions may have emerged. In such circumstances, identifying the overall importance of an indicator considering groups of stakeholders among which many have different values and objectives for the sustainable livelihoods and natural resources management remains problematic. Therefore, there is still a need to negotiate or explore to reach common consensus involving a broad set of stakeholders. Furthermore, the ownership of the research finding and recommendations and identifying acceptable tradeoffs are crucial parts of the study. Key challenges in livelihoods and natural resources management include defining meaningful indicators and an appropriate timescale and managing large amounts of information and data. Some indicators related power to people, user rights, reducing vulnerability, increasing access to natural resources and equity and benefit-sharing were more representative of the priorities of the poor. However, such indicators are also more difficult to measure and need a more comprehensive justification in the forms of cross-cutting issues in both livelihood and natural

resources management framework. Therefore, the focus on poverty and livelihood and its best practices to sustainable livelihood is greatly appreciated in the analysis of the report.

The study was conducted using a structured questionnaire and discussed in workshop with some open-ended questionnaire in World Café procedure therefore it does not restrict the ideas and perspectives of any stakeholders on the framework of the applicability of the strategy and plans. The report has been documented without any triangulation of information between the views of stakeholders and with not enough reference and proper logical framework that can be achieved in the certain period of time. The respondents were flexible to provide their perceptions on each indicator but it was difficult to judge how they perceived and evaluated the indicators and inconsistency in the judgment was found. The objectives of this study were very pragmatic and vague and thus it is difficult to form recommendations for specific areas. The recommendations of NAPs are basically linked with the objectives of PAMIR project which has been focusing on DRR, poverty reduction, environmental sustainability, livelihood but it is again difficult to interlink cross-cutting issues and the relationship between their causes and effects with respect to the specific objectives.

CHAPTER 3

SUSTAINABLE LIVELIHOOD AND NATURAL RESOURCE MANAGEMENT

3.1 The concept of Sustainable Livelihood

The Sustainable Livelihoods (SL) framework has been widely discussed in terms of the analysis of links between livelihoods and natural resources in the recent years. This approach came to prominence at the Department for International Development (DFID) from 1998 which has obtained very diverse views from different development agencies and co-operations. The concept frequently varies from one organization to the other in terms of defining the primary framework and focus areas, strategies approaches, asset ownership, income levels, age, gender, caste, social and political status. The Cooperative for Assistance and Relief Everywhere (CARE) and United Nations Development Programme (UNDP) and other organization had been provided with the sustainable livelihood approaches in the late 1990 which have developed into their own organizational perspectives and methodologies.

At the stage of implementation, they cover their activities at different levels: district, community level and household with different fundamental dimensions (policy, governance, empowerment and actions) and differed in the understanding of power dynamics as well as failed to take into consideration the informal structure of social dominance and power within the communities in social transformation process. A socially differentiated analytical approach to livelihood strategies is thus necessary in order to understand the formal and informal institutions, their underlying social architects, behaviors, relationships, and the power dynamics of stakeholder groups. It also helps to design support activities that build on the strengths of the poor. It is therefore essential that Sustainable Livelihood (SL) analysis fully involve the local people and let their knowledge, perceptions, and interests be heard, a practice which is recognized by most analysts using this concept.[1] However, all agencies have recognized that the concept of Sustainable Livelihood has to address the various factors and processes which either constrain or enhance poor people's ability to make a living in an economically, ecologically, and socially sustainable manner. The SL concept offers a more coherent and integrated approach to provide livelihood opportunities for the next generations (Chamber and Conway, 1992). The 1992 United Nations Conference on Environment and

[1] This aspect is only incidentally touched upon in Scoones (1998), but is emphasized more by other IDS researchers, such as Chambers (1995) and Brock (1999).

Development (UNCED) expanded the concept, especially in the context of Agenda 21, and advocated for the achievement of sustainable livelihoods as a broad goal for poverty eradication. It stated that sustainable livelihoods could serve as 'an integrating factor that allows policies to address 'development, sustainable resource management, and poverty eradication simultaneously'. [2]

"Sustainable Livelihoods Approach" (SLA) has broadened the scope of analysis to all relevant aspects of rural livelihoods with the ultimate goals of poverty reduction and improvement of the environmental sustainability. It also focuses on the diverse strategies employed for the poor section of societies and identifies the factors and causes and effect of poverty and searches of institutional arrangements which influence and implements the formulated strategies. In order to develop the concept and analytical framework of livelihood approaches, a number of development agencies have proposed an analytical framework model e.g. DFID, CARE, and OECD.

> According to the working definition used by DFID, "a livelihood comprises the capabilities, assets . . . and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base."[3]

The Institute for Development Studies (IDS) team at the University of Sussex, Brighton, UK, and the British Department for International Development (DFID) team proposed a somewhat modified definition of SL:

> *A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets* both now and in the future, while not undermining the natural resource base' (Chambers, and Conway, 1992).

[2] UNDP. **Promoting Sustainable Livelihoods: A Briefing Note** Submitted to the Executive Committee, June 4, 1997

[3] DFID. 1999. Sustainable Livelihood Guidance Sheets. http://www.livelihoods@dfid.gov.uk

The report by Scoones elaborated especially on three of the elements of this framework: Livelihood Resources, Livelihood Strategies, and Institutional Processes and Organizational Studies. Four types of capital are identified in the IDS framework: natural, economic and financial, human, and social capital. As several authors have pointed out, this is particularly important in the case of the poor, who often rely on a number of different types of economic activities for their livelihoods, and where it is not any activity but their combined effect for the household economy that matters (Chambers, 1995; Hussein and Nelson, 1998). The concept of sustainable livelihood strategies offer a more appropriate basis to empower the 'poorest of the poor' to become active decision-makers in achieving certain outcomes in response to a particular 'vulnerability context' and in shaping their own livelihoods. The SL approach allows for more dynamic perspectives on livelihoods and is a useful approach to facilitate an understanding of the linkages between livelihood strategies and use of natural resources for reducing poverty and promoting environmental sustainability both at the local and at the policy levels.

> It has therefore become increasingly recognized that poverty is multi-dimensional, and according to the Development Assistance Committee of the Organization for Economic Co-operation and Development (OECD), *"The dimensions of poverty cover distinct aspects of human capabilities: economic (income, livelihoods, decent work), human (health, education), political (empowerment, rights, voice), socio-cultural (status, dignity) and protective (insecurity, risk, vulnerability)"* (OECD, 2001).

The principle of the SL approach has been acknowledged and addressed and has had policy implications. It has added value to the efforts to reduce poverty. It serves to anchor development thinking and practice into the day-to-day reality and aspirations of rural communities and the poorest section of the world.

SL principles (as of 1999) Poverty-focused development activity should be:

People-centered: sustainable poverty elimination will be achieved only if external support focuses on what matters to people, understands the differences between groups of people and works with them in a way that is congruent with their current livelihood strategies, social environment and ability to adapt.

Responsive and participatory: poor people themselves must be key actors in identifying and addressing livelihood priorities. Outsiders need processes that enable them to listen and respond to the poor.

Multi-level: poverty elimination is an enormous challenge that will be overcome only by working at several levels, ensuring that micro-level activity informs the development of policy and an effective enabling environment, and that macro-level structures and processes support people to build upon their own strengths.

Conducted in partnership: with both the public and the private sector.

Sustainable: there are four key dimensions to sustainability – economic, institutional, social and environmental sustainability. All are important – a balance must be found between them.

Dynamic: external support must recognize the dynamic nature of livelihood strategies, respond flexibly to changes in people's situation, and develop longer-term commitments.

SL approaches are underpinned by a **commitment to poverty eradication**. Although they can, in theory, be applied to work with any stakeholder group, an implicit principle for DFID is that activities should be designed to maximize livelihood benefits for the poor.

Taken from: Ashley and Carney 1999, p. 7

3.2 The concept of Sustainable Natural Resource Management

Sustainable Natural Resource Management refers to the management of natural resources such as forest, land, water and other kinds of human and non-human being, with a particular focus on how management affects the quality of life for both present and future generations. It deals with managing the variety of sustainable strategies and /or approaches including land use planning, forest management planning, watershed management, biodiversity conservation, use of technologies, use of tools and decision support system models, involvement of stakeholder in resources management and local innovations and initiatives. NRM is also congruent with the concept of sustainable development that recognizes the health and productivity of landscapes in dealing with reducing poverty and supporting livelihood opportunities for people on the basis of environmental governance and security. Land use management, forest management, environment management are similar to natural resources management in the way that all advocate an integrated and holistic approach to managing natural resources. Population increase, resource use conflicts, urbanization, technological advancements, climate change, political stagnations and unsustainable use and harvesting of resources have all put more pressure on natural resources leading to land degradation and poverty. Therefore, NRM issues are particularly important where the livelihood of the majority of population is fully dependent on natural resources.

3.3 Linking Sustainable livelihood and Natural Resources

Natural resources management and livelihood is central to the achievement of most of the Millennium Development Goals which provide food for the large part of the world population[4] and provide a wide range of other goods e.g. timber, fuel, fodder, medicine, clean water, building materials, input to industries and other ecosystem services. Natural resources and livelihood issues are increasingly interconnected with highly important political concerns and policy debates such as livelihood enhancement, poverty reduction, environmental governance, disaster risk management, sustainable resource management, climate change, and devolution for the resource management. Because of their widely cross-sectorial nature, these approaches emphasize the holistic conceptual frameworks, dealing with more complex strategies in formal and informal institutional and organizational settings. They also provide opportunities to enhance livelihood options arising out of the social analysis of institutional arrangement and encourage the active participation of different stakeholder groups in the planning processes, defining a set of objectives and analyzing linkages and trade-offs between different management options. To achieve the livelihood options, a wide range of intervention options through use of proper use of resources, forest-based enterprises and development and promote green job and economy in each country is required. It also requires significant engagement with other sectors such as forestry, agriculture, emergency, energy, water, environment, trade and climate change. In this context, research-based information and knowledge should be one of the central pillars for developing and linking the elements and options for sustainable livelihood and natural resources management.

The Evidence of linking Natural Resources and Livelihoods

Approximately two thirds of the world's poor live in rural areas and rely heavily on agriculture for their income.[5] This includes not only agriculture in rural areas; 1.6 billion people rely on forest resources for all or part of their livelihoods,[6] while around 150 million people count wildlife as a valuable livelihood asset[7] and 200 million derive part or all their livelihood from fishing.[8]

The poorest usually have the least secure and smallest entitlements to land, water and forest resources. For example, in Bolivia the richest 20 percent of the population owns 91 percent of the land while the

[4] Pimental, D, M McNair, L Buck, M Pimental and J Kamil (1997), "The value of forests to world food security", *Human Ecology* 25, pages 91–120.
[5] CIDA. 2000. *Towards a healthy, well-nourished world*, p. 4. Discussion paper.
[6] Mayers, J and S Vermeulen (2002), *How Good Forest Governance Can Reduce Poverty*, WSSD Opinion Paper, IIED, London.
[7] LWAG (2002), *Wildlife and Poverty Study*, Livestock and Wildlife Advisory Group, Department for International Development, London.
[8] IUCN (2003), "Sustainable livelihoods", Media Brief for the World Parks Congress, IUCN, Gland.

poorest 1 percent owns 0.1 percent of the land.[9] Worldwide, only 2 percent of all land is owned by women. [10] However, a vast majority of households, especially in developing countries, depend on land and other natural resources for satisfying and addressing their hand- to- mouth problems and expecting their long-term livelihood ambitions.

Millions of rural South Africans depend upon biological resources for day-to-day survival. Access to this "natural capital" provides a crucial contribution to livelihoods, a buffer against poverty and an opportunity for self-employment" [11] For Africa, 57 % of the economically actively people are still employed in Agriculture (against more than 74% in 1965.

Natural disasters, poverty and environmental conditions are closely correlated in least developed countries (LDCs): declining agricultural productivity from climatic shocks increases poverty and the intensive use of marginal lands by poor people contributes to increased disaster risks [12]

Of the 1.2 billion people estimated to live on less than US$ 1 a day (i.e. those that are the target of MDG1), 70 per cent live in rural areas with a high dependence on natural resources for all or part of their livelihoods. [13] At world level the per capita available land has been reduced from 0.39 ha in 1961 to 0.27 ha in the 1990s. The land/man ratio for the African continent has decreased from 0.62 ha in 1965 to merely 0.26 ha in 1995. In countries like Rwanda and Malawi this figure has even dropped to almost 0.15 ha.[14]

In marginal rural areas, people's workloads are generally greater and rates of severe malnutrition and debilitating infectious diseases are higher than in urban areas [15] Similarly, marine resources play a significant role in contributing to food security and sustainable local livelihoods (1 billion Asians rely on fish for their primary source of protein, while the global fishing industry employs some 200 million people.[16]

The major indicator and results of gender issues - Tajikistan's Development Index is based on Gender Equality factor, which rose to the 106th place in the world in 2008, but a decreasing trend is evident when taking into consideration the last three years — 2005 (91st place), 2006 (90th place) and 2007 (90th place).[17]

According to the UNDP/United Nations Environment Programme (UNEP) Survey conducted in the framework of the Poverty and Environment Initiative (PEI), Tajikistan, the country's population, particularly in the rural areas, has limited access to electricity supply. The energy crisis in 2007–2008 led to massive forest cutting.[18]

[9] Encuesta Condiciones de Vida. 1995. Elab. SISE.
[10] FAO. 1999. *Women's right to land and natural resources: Some implications for a human rights-based approach*. Rome.
[11] Wynberg, R (2002), "A decade of biodiversity conservation and use in South Africa: tracking progress from the Rio Earth Summit to the Johannesburg World Summit on Sustainable Development", *South African Journal of Science* No 98, May/June 2002.
[12] UNDP. 2001. Disaster Profiles of the Least Developed Countries: a report from the Third United Nations Conference on Least Developed Countries, p. 2. (Held in Brussels.)
13 LWAG (2002), op. cit.
[14] Varheye W., Brinkma R. and Sims D. (1997). *Elements of a Different Approach to Land Development Issues*. The Land, 1 (2): 143-152
[15] FAO. 2000. *The State of Food and Agriculture 2000*, p. 221. Rome.
[16] IUCN (2003), op. cit**.**
[17] See Poverty Reduction Strategy of the Republic of Tajikistan for 2010-2012 published at 2010
[18] Ibid..

CHAPTER 4

CASE STUDY: TAJIKISTAN

4.1 Background

The main idea of the proposed survey was to initiate the national process of recommending the elements for the development of national action plans for sustainable livelihood and natural resource management in Tajikistan. Elements of action plans were based on several strategies and action plans related to the issues of DRR, forestry, land use system, environment management and poverty reduction. The action plan gives a status and problem and potentials, and indicates the general future directions with specific recommendations for each elements/problems. The identification of the key stakeholder, the formation of an expert and technical team for the study, communication and preparation of the working documents as well as the Delphi survey questionnaire were the major tasks of this study.

Introduction of the Republic of Tajikistan and the Gorno-Badakhshan Autonomous Oblast (GBAO), Pamir regions

Tajikistan is a mountainous, landlocked country, bordering Afghanistan, Kyrgyzstan, the People's Republic of China and Uzbekistan. Over 70 percent of the country is high mountains, more than half of which rise 3,000 m above sea level. The east is covered by the *Pamir Mountain Range*; across the North stretches the *Alay Range*. Only in parts of Khatlon province and in the *Ferghana Valley*, near the border to Uzbekistan, are small portions of intensively farmed lowland areas. The Pamir Mountains, or Pamirs, also known as the Roof of the World, extend across parts of Afghanistan, China, Kyrgzstan, Pakistan and Tajikistan with its main parts located in Tajikistan's mountainous province of Gorno Badakhshan (GBAO) comprising about 63,700 km², with the highest peak (7495m). [19] Tajikistan is the poorest among the Central Asian countries of the former Soviet Union and ranked as the poorest country in Europe and Central Asia, [20] with a Gross National Income per capita of about US$700 in

[19] See Tajik Pamirs: Challenges of Sustainable Development in an Isolated Mountain Region, Swiss Agency for Development and Cooperation, ISBN 3-906151-74-3, 2003

[20] See: World Bank, Country Partnership Strategy, p. 1

http://siteresources.worldbank.org/TAJIKISTANEXTN/Resources/Country_CPS. pdf), accessed 28 January 2011.

2009.[21] It is a highly agrarian country, with its rural population at more than 70% and agriculture accounting for 60% of employment and around 30% of GDP.[22]

Map of Tajikistan as a landlocked country

Tajikistan covers a total area of 143,000 km². The territory stretches 700 km from east to west and 350 km from north to south. It is divided into four administrative regions that are also known as "provinces" (*viloyat*), including *Sughd* and *Khatlon*, the autonomous province of *Gorno-Badakhshan* with its capital, *Khorog*, and the former Garm province now called the *Region of Republican Subordination* (RRP - *Raiony Respublikanskogo Podchineniya* in transliteration from Russian).[23] The Tajik Gorno Badakhshan Autonomous Oblast (GBAO) is a mountainous region in the eastern part of Tajikistan. GBAO covers almost 43 per cent of the country's area and is sparsely populated due to the harsh natural conditions. About 220,000 people, roughly 3 per cent of Tajikistan's population, live in an area of 64,200 km²,[24] about 6 percent of GBAO population live in the eastern Pamir. The Eastern Pamir people migrate to

[21] See: World Bank (http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/TAJIKISTANEXTN/0,,menuPK:287273 pagePK:141132~piPK:141109~theSitePK:258744,00.html), accessed 28 January 2011

[22] Lerman Z. 2008: Tajikistan: An Overview of Land and Farm Structure Reforms.

[23] See Forestry sector analysis of the Republic of Tajikistan, 2009, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH.

[24] Population data of 2008, Statistical Agency under the President of the Republic of Tajikistan, http://www.stat.tj/english/database.htm), accessed 5 July 2011.

Russia less when compared to Western Pamir.[25] Large populations of western Pamir are financially well-off because of remittance to Russia. In rural GBAO, 47.2 per cent of the population lives in poverty whereas urban GBAO the figure is 18.4 per cent. [26]

The highest elevation of the Pamirs is marked by the Peak Somoni (formerly Peak Communism) at 7,495 metres above sea level (masl) formed from the junction of the *Tian Shan*, *Karakoram*, *Kunlun* and *Hindu Kush* ranges. The average elevation of the *Pamir* range is between 3,600 and 4,400 m. Most of the *Pamir* range is located in Tajikistan, in the *Gorno-Badakhshan Autonomous Oblast* (an administrative term used in the Soviet Union), or GBAO. It covers the main part of the Pamir Mountains, which reach into Kyrgyzstan from the northern part of GBAO, into China from the eastern part and into Afghanistan from the southern part. Many glaciers cover the high altitudes of the Pamirs, including the longest glacier outside of the polar region: *Fedjenko Glacier,* which stretches across a length of more than 70 km and has an estimated depth of 800 m. Hence, the Tajik Pamirs contain an enormous water reservoir for Central Asia, feeding the *Syr Darya* and *Amu Darya,* which was a major source for the drying up Aral Sea.[27] The Eastern Pamir is dominated by an arid high plateau comprising of high mountains with an average elevation of 4,420 masl (ranging from 2,970 to 7,130 masl), whereas the Western Pamir is characterized by high and steep valleys, with an average elevation of 4,060 masl (900 to 7,490). [28]

According to the World Bank, Tajikistan is the country in Central Asia and Europe most vulnerable to climate change, [29] with significant temperature differences at high and low elevations. Annual rainfall is influenced by topography, and is often a constraining factor for agriculture. At lower elevations, the average temperature range is from 23° to 30°C in July and from 1° to 3°C in January and in the eastern *Pamirs*, the average July temperature is 5° to 10°C, while January's average temperature drops to between -15° and -20°C. [30] Above 2,500 masl – including all Eastern Pamir – the increase seems to be lower than in the floodplains and lowlands, i.e. the temperature rise here was between 0.1 and 0.7°C whereas average

[25] In Alichur, there are migrants amongst the Pamiri population (to approximately the same amount), indicating that the difference in migration is not a regional but an ethnic difference.

[26] Poverty is measured here with two methods: "(i) the international standards of poverty (US$2.15/day), which depends on purchasing power parity; and (ii) the value of basic household needs". See: International Monetary Fund. 2010. "Republic of Tajikistan: Poverty Reduction Strategy Paper". Washington. p. 6.

[27] Linking Natural Resource Management and Adaptation to Climate Change Experiences from the Tajik Pamirs, 2012, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

[28] See: Hergarten, Christian. 2006. "Investigations on land cover and land use of Gorno Badakhshan (GBAO) by means of land cover classifications derived from LANDSAT 7 data making use of remote sensing and GIS techniques", diploma thesis at the University of Bern, p. 4.

[29] See: World Bank. 2009. "Adapting to Climate Change in Europe and Central Asia", p. 5.

[30] See Forestry sector analysis of the Republic of Tajikistan, 2009, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH.

temperature in Tajikistan increased by 0.1 to 1.2°C, depending on region and altitude. [31] Most of the donor and scientific reports confirmed in recent days that Tajikistan is highly vulnerable to global climate change. Most precipitation falls at the *Fedchenko Glacier*, which averages 2,200 mm per year; the lightest precipitation is in the eastern *Pamirs*, which average less than 100 mm per annum. [32] Most scientific sources state that in the Eastern *Pamirs*, precipitation has decreased by 5-10 per cent (in Murghab even by 44 per cent) and hydrological stations above 2,500 masl have registered about 3 per cent less precipitation, while below that altitude precipitation increased by 8 per cent.[33]

The agricultural sector accounts for about 27 percent of the country's GDP,[34] and total agriculture land amounts to 4.6 million ha.[35] Despite the fact that agriculture is the predominant economic pillar in GBAO, the province has not sufficient arable land to be self-reliant in terms of food.[36] According to the Land Code (State Land Committee 2004), all agricultural land in Tajikistan is owned by the state. The legislation does not differentiate between arable land and pastures. In reality, many households have permanent heritable rights to land plots as shareholders in so-called "collective dekhan farms", based on membership of former Sovkhoz or Kolkhoz. [37] A serious problem, however, relates to land use rights, the registration system lacks comprehensive coverage of land information and legal interests. [38]
Livestock is considered as a kind of saving bank and serve as 'living' capital that can be easily converted to cash when required.[39] The livestock in Tajikistan is a mix of cattle and sheep, with over 1 million 'heads' of cattle and around 3 million 'heads' of sheep and goats.[40] However, the total number of cattle, sheep, goats and horses has been steadily increasing in

[31] Linking Natural Resource Management and Adaptation to Climate Change Experiences from the Tajik Pamirs, 2012, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
[32] See Forestry sector analysis of the Republic of Tajikistan, 2009, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
[33] See Linking Natural Resource Management and Adaptation to Climate Change Experiences from the Tajik Pamirs, 2012, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
[34] The State Statistics Committee (2005).
[35] Akhmadov, K., Geneva Timber and Forest Discussion Paper 46. Forest and Forest Products CountryProfile Tajikistan, New York: United Nations(2008).
[36] Tajikistan can only meet half of its wheat consumption by its own production. See: FAO, p. 9.
[37] See Robinson S., Whitton M. Biber-Klemm S. Muzofi rshoev N. 2010a: The Impact of Land Reform Legislation on Pasture Tenure in Gorno-Badakhshan: From Common Resource to Private Property. In: Mountain Research Development (MRD), Vol. 30(1), p. 4–13. http://www.bioone.org/doi/pdf/10.1659/MRD-JOURNALD-09-00011.1
[38] Saigal S. 2003: Tajikistan: Issues and Approaches to Combat Desertifi cation. ADB and The Global Mechanism.
[39] See Forestry sector analysis of the Republic of Tajikistan, 2009, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
[40] Saigal S. 2003: Tajikistan: Issues and Approaches to Combat Desertifi cation. ADB and The Global Mechanism.

recent years, [41]resulting in greater meat and dairy production. Livestock provides regular income (e.g. milk products), which is important for rural livelihood. Rangeland Pastures constitute 3.5 million ha with 1.9 million ha of summer pastures, 1.1 million ha of winter pastures, 400 thousand ha of spring-summer-autumn pastures and 105 thousand ha of year-round pastures.[42]

The forest area in Tajikistan is officially calculated at 410,000 ha (or 3 percent of the total land area).[43] Official Food and Agriculture Organization (FAO) statistics state that between 1990 and 2005 the forest area in Tajikistan increased from 408,000 to 410,000 ha, that is, the increase was insignificant. Forests can only be found in the Western Pamir, since due to the high altitude and harsh arid climate forests cannot grow in the Eastern Pamir. Estimations of the current forest cover in GBAO differ between 0.15 per cent (Forestry Agency of GBAO)[44] and 0.07 per cent (estimations by Hergarten based on satellite images). Since livestock is of increasing importance as a major income at household level, the conflicts between forest protection, rehabilitation and sustainable use of its resources and its effective use and management of forest, land, water, rangeland are big challenges.[45] Huge demand for wood for *Pamiri style* house and for fuel wood, which is prime source of energy, is also a challenge.[46] Therefore, the government of Republic of Tajikistan began its forestry, pasture land management activities and developed framework of the regional program' Sustainable Use of Natural Resources in Central Asia and designed several national, regional and local initiatives in order to maintain biodiversity, combat land-degradation, rehabilitate pasture and rangeland, promote activities related to tackling climate change and adaptation for resilience. Furthermore, the Republic of Tajikistan has developed and revised the National Strategy and Action Plans for disaster risk reduction, sustainable land management, Forest Management and Poverty reduction. Some of them are highlighted and referred to in the study.

National Disaster Risk Management Strategy For 2010 – 2015 (Republic of Tajikistan):[47]
The national disaster risk management strategy was declared and approved in accordance with the Law 6 of the Republic of Tajikistan "About state perspectives, concepts, strategies and programs of social and economic development of the Republic of Tajikistan". It was decided

[41] The following figures are cited in the Akhmadov, K., op. cit. (2008).
[42] Khusamov R., Kienzler K., Saparov A., Bekenov M., Kholov B., Nepesov M., Ikramov R., Mirzabaev A., Gupta R. 2009: Sustainable Land Management Research Project 2007-2009. Final Report – Part III (Socio-Economic Analysis). ICARDA Central Asia and Caucasus Program. Tashkent, Uzbekistan.
[43] Based on UN/FAO statistics from 2007.
[44] Forestry Agency of GBAO.
[45] Linking Natural Resource Management and Adaptation to Climate Change Experiences from the Tajik Pamirs, 2012, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
[46] See Forestry sector analysis of the Republic of Tajikistan, 2009, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
[47] The main part is excerpt from National Disaster Risk Management Strategy For 2010 – 2015 (Republic of Tajikistan)- http://www.preventionweb.net/files/27582_tajikstrategyenglishbjedits19sep11b.pdf

to appoint Committee on Emergency Situations and Civil Defense under the Government of the Republic of Tajikistan as coordinator of the implementation of the National Disaster Risk Management Strategy of the Republic of Tajikistan for 2010-2015. Relevant ministries and agencies, local executive bodies of the Republic of Tajikistan were instructed to implement and ensure the implementation of the National Disaster Risk Management Strategy of the Republic of Tajikistan for 2010-2015 within funds allocated in the budget of the sector as well as humanitarian and donor funds of the international organizations. Committees on Emergency Situations and Civil Defense under the Government of the Republic of Tajikistan are responsible for submitting annual progress reports on implementation of the strategy to the Government of the Republic of Tajikistan. The strategy focused designing the plan for reducing the impact of disasters in the Republic of Tajikistan and included disaster risk reduction tasks in the development programs for the society and country in general. The action plans are focused on the effective prevention, mitigation, warning and response to possible disasters to contribute to effective disaster risk management at the individual level, at the household level, as well as at regional and national levels. Government of the Republic of Tajikistan endorsed every effort to implement disaster risk reduction priorities recommended in the Hyogo Framework for Action "Building the Disaster Resilience Capacity of Nations and Communities", which includes priority areas for actions and disaster risk reduction objectives. The main goal of this Strategy is to reduce preventable damage from natural and technological disasters, in order to improve lives and welfare of the Republic of Tajikistan through integration of disaster risk reduction into all development activities of the Republic of Tajikistan and improvement of disaster preparedness and response. Strategy consists of five components (Institutional Mandates and Legal Issues, Disaster Risk Assessment, Disaster Risk Management and Achievement of Sustainable Development in the Republic of Tajikistan, Disaster Preparedness and Response and Knowledge Management: Education, Training and Public Awareness). Each component was developed with goals, objectives and concrete actions to achieve them.

Poverty Reduction Strategy of the Republic of Tajikistan for 2010-2012:[48] The poverty Reduction Strategy (PRS) of the Republic of Tajikistan for 2010–2012 aims to serve as a medium-term programme for the implementation of the National Development Strategy (NDS) up to 2015. It determines the major socio-economic developments of the country for implementing institutional and economic reforms and improving the scope and quality of

[48] See Poverty Reduction Strategy of the Republic of Tajikistan for 2010-2012 published at 2010

social services aimed at mitigating the burden of poverty in the country: (i) the establishment of the general conditions for development (the Functional Block); (ii) promotion of sustainable economic growth (the Production Block); and (iii) development of human potential (the Social Block). PRS is a three-year medium-term programme developed within the framework of the NDS which clarifies state policy measures on the current trends in order to gradually achieve goals outlined in the NDS. The PRS serves as the basis for developing sectoral and regional strategies. The main features of the strategy are related to the NRM and poverty reduction, which has been main priority and address gender equality, environmental protection and adaptation to climate change are cross-cutting issues either individual or other sectors. The Government has focused on and implemented certain measures to bring the following into the global economy in line with international standards: the public administration system, macroeconomic development, the investment climate, private sector and entrepreneurial activity development, and regional cooperation and integration. The strategy has seriously considered the environmental problems which are the key issues for environment protection in the country due to their complexity associated with waste disposal, recycling and use. Action plans for land management, water management, protection and management of mountain ecosystem, climate change and prevention of natural disasters were developed. The strategy has considered the implementation of gender policy demonstrating the Government‘s commitment to gender equality promotion. Specific steps have been taken to improve the institutional mechanisms to promote women within the government agencies. The PRS is based on the goals and tasks set forth in the MDGs and the NDS, and calls for a range of measures to be carried out in all sectors, including those aimed at achieving gender equality.

National Programming Framework, Republic of Tajikistan, 2006:[49] The National Programming Framework (NPF) presented a road map for Tajikistan to counter and reverse a decline in land productivity and degradation of land ecosystems observed in particular during the last fifteen years. The NPF is the result of a review and analysis conducted under Central Asian Countries Initiative for Land Management (CACILM), a multi-country and multi-donor partnership initiated in 2003 to support integrated and consistent approaches to investing in sustainable land management (SLM) in each of the countries of Central Asia over a period of the next 10 years. The NPF builds on earlier attempts to make a synthesis of the problem, in particular the National Action Plan to Combat Desertification (NAPCD) prepared in 2000-

[49] See Central Asian Countries Initiative for Land Management, National Programming Framework, The Republic of Tajikistan, UNCCD National Working Group of the Republic of Tajikistan, 2006

2001 as part of Tajikistan's activities under the United Nations Conventions to Combat Desertification (UNCCD). The principal categories of land degradation in Tajikistan include (i) irrigation-related land degradation, in particular secondary salinity, water logging and irrigation-related soil erosion, (ii) soil erosion in rain-fed farmlands, (iii) pasture degradation, (iv) degradation of forests and related loss of biodiversity, and (v) other forms of land degradation.

The framework highlighted that the fundamental cause of degradation has been lack of incentives to invest in safeguarding or enhancing long-term productivity of land. Observed technical causes of land degradation are usually only symptoms of the more fundamental reasons. In Tajikistan these reasons typically include one or more of the following: (1) insufficient stake in the outcome of the investment (linked to restricted ownership, or incomplete management autonomy), (2) an environment that makes investment risky (extortion, corruption, etc.) or lowers its profitability (e.g. high transport cost, trade barriers, dys-functional regulations, etc.), (3) low capacity on the part of the authorities to impartially enforce laws and regulations, (4) uncertain and changing policies, (5) poverty, (6) undeveloped use of credit, (7) insufficient or inappropriate technical know-how, and (8) reaction to a sudden change in the financial and livelihood parameters confronting local communities. A reform and investment program is formulated in the NPF in which the overall program's objective to help restore, sustain and enhance the productive functions of Tajikistan's land resources will be pursued through activities in ten program areas, namely (1) Strengthening the Enabling Environment (2) Integration of SLM into Land Use Planning and Management, (3) Sustainable Development of Rain-fed Lands, (4) Sustainable Development of Irrigated Crop Lands, (5) Sustainable Forest and Woodlands Management, (6) Sustainable Pastureland Management, (7) Targeted Research, (8) Integrated Resources Management, (9) Protected Area Management and Biodiversity Conservation, and (10) National Program Coordination and Management. The ten-year investment program is divided into three phases (2006-08, 2009-13, and 2014-16, respectively).

Strategy and Action Plan for Sustainable Land Management in the High Pamir and Pamir-Alai Mountains-2011:[50] The Strategy and Action plan was developed on the basis of multi-level, multi-stakeholder negotiations between representatives of governmental, non-governmental, and international organizations, the scientific community, and local self-

[50] See GEF/UNEP/UNU Project "Sustainable Land Management in the High Pamir and Pamir-Alai Mountains – Integrated and Trans-boundary Initiative in Central Asia"

government bodies as a trans-boundary initiative. It sets priorities for the development of the Pamir and Pamir-Alai region. It is undertaken as a part of a GEF/UNEP/UNU project on "Sustainable Land Management in the High Pamir and Pamir-Alai Mountains – Integrated and Trans-boundary Initiative in Central Asia" in order to improve the legal framework and to strengthen the region's economic, informational, and educational potentials and addresses problems related to land use systems and the degradation of land resources, with the aim of decreasing the vulnerability of fragile mountain ecosystems and, consequently, reducing poverty among the local populations. It also proposes concrete steps for the further development of international cooperation between the two Central Asian countries of Kyrgyzstan and Tajikistan. The Strategy has great practical significance, as it determines the direction of sustainable development of the High Pamir and Pamir-Alai mountains in the medium to long term for addressing socioeconomic concerns, including the livelihoods of mountain people.

The Strategy and Action Plan defines specific areas that require trans-boundary collaboration to improve natural resources management in the area. These include: monitoring and study of biodiversity in the region and especially migration processes across borders, and protection of the region's biodiversity against the main threats of poaching, illegal hunting, and tourism, regulation of pasture use, improvement of the legal framework and legal acts on trans-boundary relations (border checkpoints, customs, and veterinary services), development of trans-boundary economic relations, and (5) development of different types of tourism across the region. Further steps on those trans-boundary issues would depend on the extent to which the solution of the concrete problems addressed will benefit Kyrgyzstan and Tajikistan respectively. Four "action plans" were elaborated on for the following priority directions: (1) Biodiversity and Forest Management, (2) Increasing the Efficiency of Farming, (3) Use of Mountain Pastures and Increasing the Productivity of Livestock Farming, and (4) Reducing Risks of, and Vulnerability to, Natural Hazards. These action plans are based mainly on working group discussions conducted during the various multi-level stakeholder forums, and thus provide a comprehensive list of actions needed across the different administrative levels. The action plans anticipate participation of governmental and non-governmental structures, local communities, and international donor organizations in addressing poverty, land degradation, loss of biological diversity, renewable energy production, and sustainable management of other natural resources. The study illustrates and identified the three

implementation phases that were distinguished: short-term (up to 2 years), mid-term (up to 5 years) and long-term (up to 10 years).

4.2 A set of Indicators and brief descriptions

The indicators were numbered and the experts were asked to evaluate each indicator individually and they were free to comment on, add or delete indicators in a structured questionnaire survey process. As the applicability of an indicator could vary between different scales, the assessment was carried out in reference to various geopolitical and geographical specifications. To avoid response bias associated with the interview, the indicators of same components were not in order and they were later divided into six criteria based on their nature and contributions. They may be listed in one criterion, but they often contribute to more than one criterion or element. Further analyses of the strategies are presented after the findings of Delphi survey which shows the various proposed identified indicators being evaluated by the different experts at different geographical scales: National, Regional (Oblast Province and District) and local. In total, 52 indicators were developed for the final set for the survey (see details in Annex 1). All elements which were identified by the experts as 'very important' or "important" were discussed at the national workshop with the purpose of finalizing the national set.

Table 3: Lists of Possible standard set for Sustainable Livelihood and Natural resource management, PAMIR Project/ Tajikistan

I.1 Regional co-operation	*The regional cooperation should facilitate harmonization of standards and regulation to enhance cross border initiatives*
I.2 Reduce Environment risk	*The strategy should prioritize measures in order to reduce environmental risks*
I.3. Community-level activities and Hazard, Vulnerability and Socio-Risk Assessment	*Community-level activities and Hazard, Vulnerability and Socio-Risk assessment should be determined and recognized as essential component of the disaster risk reduction*
I.4 Assessment of risk zones and monitoring	*Information about potential hazards, vulnerability and risk for all inhabited areas should be provided and the capacity for monitoring at all national and district levels should be strengthened*
I.5 Improve environment security	*Improved environment security should ensure sustainable development with minimum negative impacts to environment*
I.6 Use of the Sustainable Livelihood framework (SLA)	*SLA should be chosen as a conceptual and methodological framework for linkages between the context, vulnerability, poverty and access to forest/ resources*
I.7 Ecosystems approach into environmental management	*Introducing the ecosystems approach into environmental management should be taken as a key condition for achieving sustainability of the environment and management of natural resources*
I.8 Plantation and design and layout of plantations	*Concern authorities promote plantation in order to maintain the ecosystem function and the forest area and design and layout of plantations*
I.9 Social security	*Concerned authorities should promote social security specially for identified deprived, asset less and marginalized community*
I.10 Integration of DRM and national land use and land	*Disaster risk management issues should be integrated into the process of development of the national policy and decision-making related to land use and*

planning policy	*land planning*
I.11 Disaster Preparedness and Response	*National Disaster Preparedness and Response Framework Plan should be introduced and prepared at the national, regional and district levels*
I.12 Public awareness programmefor disaster reduction	*Concerned authorities should establish nationwide infrastructure to increase awareness of disaster risk reduction methods*
I.13 Monitoring and Biodiversity	*There should be conducted long-term monitoring of status of biodiversity and studies on restoration and ecosystems*
I.14 Private sector involvement	*Concern authorities should involve the private sector in the sustainable management of natural resources*
I.15 Ecosystem functions and services	*Ensuring the integrity of ecosystems and their components is a primary task for sustainable livelihood and natural resource management*
I.16 Conflicting laws	*Concern authorities evaluate and develop mechanisms to address conflicting laws*
I.17 Income generation activities	*Particular attention should be paid to catalyzing alternative livelihoods and small businesses, and facilitating local natural resources management planning*
I.18 Environmental governance	*Concerned authorities should be strengthening environmental governance*
I.19 Scientific research team	*Concern authorities promot scientific research team for conducting disaster risk management, linkage poverty and environment*
I.20. Customary tenure or use rights	*Government protects the customary tenure or use rights of the natural resources*
I.21 Early warning systems	*Concerned authorities should be developing prompt warning of the relevant disaster response services and public about potential disasters*
I.22 Institutional and environmental sustainability	*There should be strengthened institutional potential with a view to promote environmental sustainability*
I.23. Reform of the social welfare system	*There are plans to enact and implement reform of the social welfare system to take the conditions of the market economy into account*
I.24 Indigenous people	*Concerned authorities identify indigenous people with customary/traditional rights to forest resources*
I.25 Illegal and unauthorized activities	*Forest management protects from illegal harvesting, encroachment, illegal settlement and other unauthorized activities*
I.26 Planning and implementation	*Forest management consults local communities for planning and implementation of forest management*
I.27 Access to natural resources	*Forest management clearly defines access to natural resources*
I.28 Equal rights and opportunities	*Government/local authorities should eliminate gender inequality and provide equal rights and opportunities*
I.29 Local processing and new markets	*Concerned authorities encourage the optimal use and local processing of forest diversity of products and new markets*
I.30 Land management	*Concerned authorities are required to improve and coordinate legislation on environmental protection in order to establish the institutional conditions to successfully combat desertification*
I.31 Genetic diversity, native species diversity and endangered species	*Concern authorities maintains genetic diversity, native species diversity and conserve rare, threatened and endangered species*
I.32 Climate change and payment system for ecosystem services	*Concerned authorities should be developing the norms necessary for adaptation to climate change and introduce payment system for ecosystem services, not only for natural resources use.*
I.33 Comprehensive assessment of the impact of economic activity on the environment	*Implementing and applying a short-term comprehensive assessment of the impact of economic activity on the environment should be recognized as being necessary for promoting sustainable natural resources management.*
I.34 Integration into Land Use Planning and Management	*The capacity of national and local institutions should be formulated and integrated into land use planning and management*
I.35 Institutions and Policies for Pastureland Management	*Management should create institutional and policy pre-conditions for investments in pasture rehabilitation*
I.36 Implementation of Sustainable land management (SLM) projects	*National institutions should improve their capacity to integrate SLM considerations into their operations and budgets and to design and implement SLM projects*
I.37 Encroachment and grazing	*Concern authorities control encroachment and impacts of grazing*
I.38 Stakeholder participation and participatory decision making	*Concerned authorities should widenparticipation in decision making and contribution to SLM by civil society and other stakeholders*

I.39 Conservation and management of biodiversity	*Government/local authorities should be promote conservation and proper management of biodiversity effectively*
I.40 Power and voice	*Area of forests should be managed by user groups with representatives of the poor*
I.41 Sustainable utilization of NTFPs	*Concern authorities should develop management guidelines for NTFPs*
I.42 Awareness of environmental management	*Forest authorities should develop awareness strategy for conservation, secure and sustainable environment*
I.43 Wildlife farming and hunting	*Concern authorities promote measures for wildlife farming and hunting*
I.44. Foster equitable land distribution	*Policies should foster equitable land distribution and agriculture intensification. to reduce pressure to settle marginalized lands*
I.45 Professional and technical personnel	*SFM allows access to an adequate number of professional and technical personnel*
I.46 Knowledge management and transfer	*Research institutions develop mechanisms and necessary knowledge management and transfer*
I.47 Implementation of Joint forest management and leasing relations	*Concern authorities ensure the implementation of joint forest management and leasing relations*
I.48 Reforestation concept/Strategy	*Concerned authorities should develop nationwide reforestation concepts*
I.49 Pasture management and productivity of livestock	*SLM ensures sustainable pasture management and enhancement of productivity of livestock farming*
I.50 Tran boundary co-operation	*SLM supports trans-boundary co-operation and programmes for biodiversity conservation, poaching control and environmental education*
I.51 Transparency in decision-making, annual programme and budget	*Concern authorities ensures transparency in decision making processes*
I.52 Effective inter-sector and inter-agency coordination	*Mechanisms for effective inter-sector and inter-agency coordination shall be put into a more efficient system of institutional management of natural resources and the environment.*

4.3 Delphi experts participating in the survey

The Delphi survey was conducted between June and August 2012 and preliminary findings of the study were presented at the national workshop which was held in Dushanbe, Tajikistan (25-26 September, 2012). The total of 18 participants representing government agencies, FOCUS, Tajikistan, I/NGOs, University and PAMIR project staffs participated in the National workshop. A total 53 respondents took part in the Delphi survey, with more than 35% female participation, and comprised mainly from government representatives (59%), international and non-governmental organizations (32%), and associations (9%). Out of the 53 respondents, experts from the natural resources management sector were in the majority (42%). Of the rest, 19% were from the environment, 13% from social sciences, 11% from economics, 2% from politics and 13% were categorized as being from other occupations (**Table 4.**)

Table 4: Descriptive statistics of Delphi experts participating in the survey of C&I development for National Action Plans, Tajikistan (Source: Delphi Survey, 2012)

Gender	Received Responses
Female	19 (35.8%)
Male	34 (64.25)
Affiliation	**Received Responses**
Government	31(58.5%)
I/NGOs	17 (32.1%)
Association	5 (9.4%)
Expertise	**Received Responses**
NRM	22 (41.5%)
Environment	10 (18.9%)
Social science	7 (13.2%)
Economics	6 (11.3%)
Politics	1 (1.9%)
Others	7 (13.2%)
Total	**53 (100%)**

4.4 Result and analysis based on the preference elicitation

For a quantitative analysis of the experts' evaluations of the indicators regarding the applicability and importance of indicators for different geo-political and geographical regions with respect to SLNRM were assessed on the basis a Likert scale rating (where 1 = least applicable/ importance and 5 = very high applicable/ importance). The 52 key indicators in target countries were categorized under six Criteria: (1) Disaster Preparedness and Management, (2) Forest Management, (3) Land Use, Biodiversity and Pasture Land Management, (4) Environment Management, (5) Livelihood Promotion and (6) Co-operation, co-ordination and other Cross-Cutting issues (see variation of order of the indicators are numbered). Based on the experts' preference elicitation, the average rating of 4 and above was considered a benchmark for high applicability and importance and below 4 indicated low applicability and importance. For each indicator of key criteria, it was possible to calculate the cumulative average sum to allow an interpretation of the overall applicability and importance of the given indicator. We organized the results of the Delphi survey in terms of the information and feedback gained from the experts, the extent to which consensus among survey participants emerged, and the priority or importance assigned to each of the items/issues.

4.4.1 Preference elicitation on Criteria Set 1 (Disaster Risk Management)

The ratings obtained from the experts were used to assess the importance of indicators with respect to sustainable livelihood and natural resources management at the national, Oblast, Rayon and local levels. A closer analysis of the Criteria Set 1 (Disaster Risk Management), revealed that the elements related to the integration of DRM and national land use and land use policy (I.10), Disaster preparedness and response (I.11) were highly applicable at national and Oblast levels and the promotion of scientific research team (I.19) for conducting study on disaster risk management linkage to poverty and environment was judged as highly applicable at national and Oblast levels as well as on the local level. Most of the indicators were rated as highly applicable at Oblast level except for 'Assessment of risk zone and monitoring (I.4)' which was only highly applicable at Rayon level. The community-level activities and Hazard Vulnerability and Socio-Risk Assessment (I.3), Disaster Preparedness and Response (I.11) and Early warning systems (I.21) were also evaluated as highly applicable at local level. The applicability of each indicator varies on different geographical levels and its degree of importance in overall judgment is shown (**Fig 4.1**).

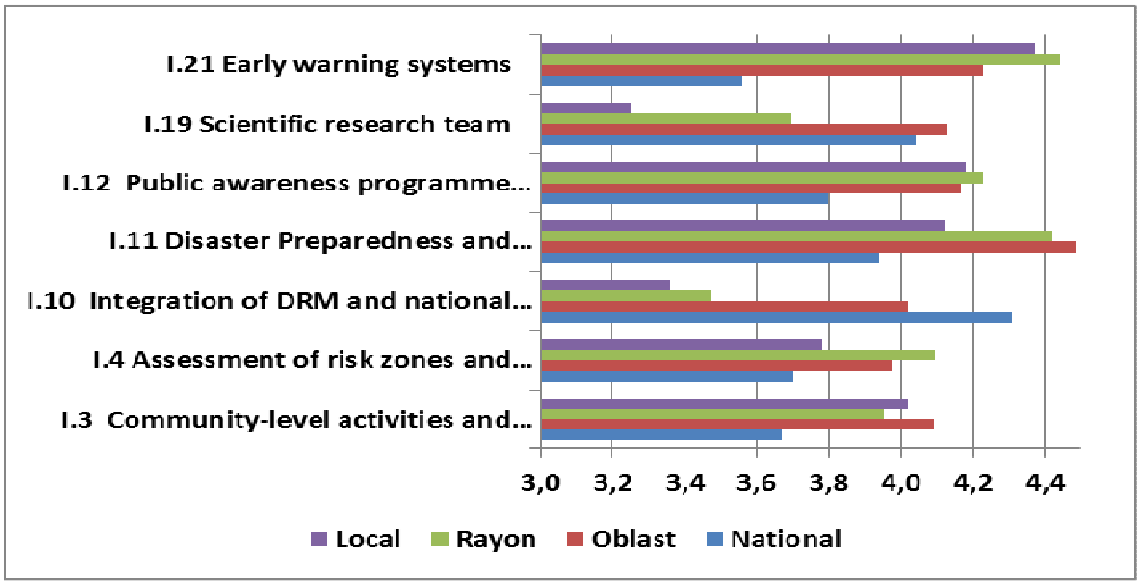

Figure 4.1: Applicability at National, Oblast, Rayon and Local level by Stakeholder Preference elicitation for the indicators on Criteria Set 1 (Disaster Risk Management), Tajikistan

Out of 7 indicators under Criteria Set 1 (Disaster Risk Management), all the indicators (I.3, I.10, I.11, I.12, I.19 and I.21), except for 'Assessment of risk zone and monitoring' (I.4), were judged as highly important based on experts' judgment. The indicators ' Disaster Preparedness and Response (I.11)', ' the need of assessment of early warning system (I.21)' and ' public awareness progremme for disaster

reduction (I.12) were rated 4.35, 4.26 and 4.16 respectively representing high importance in the overall judgment (**Fig 4.2**).

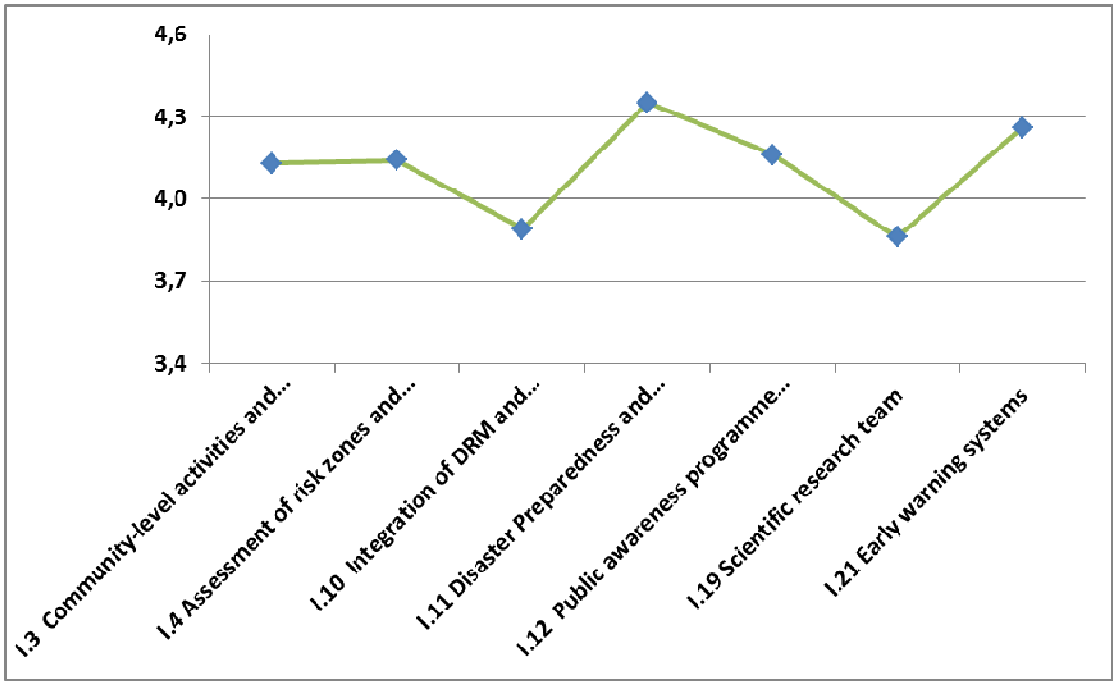

Figure 4.2: Overall importance by Stakeholder preference for the indicators on Criteria Set 1 (Disaster Risk Management), Tajikistan

4.4.2 Preference elicitation on Criteria Set 2 (Forest management)

Under Criteria Set 2 (Forest management), the development of nationwide reforestation/strategy (I.48), Sustainable utilization of NTFPS (I.41) and Access to natural resources (I.27) were rated 4.38, 4.28 and 4.27 respectively and rated highly applicable. The indicators (I.48 and I.27) were judged as highly applicable at all geographical levels. 10 out of 12 indicators were applicable at Oblast and Rayon levels and interestingly, only four highly applicable indicators were present at local level.

Table 5: Stakeholder preference for the indicators of criteria 2 (Forest management and Biodiversity Conservation), Tajikistan

Indicators	National	Oblast	Rayon	Local
I.8. Plantation and design and layout of plantations	3.73	4.26	4.11	4.05
I.15 Ecosystem functions and services	4.09	3.98	4.02	3.59
I.20 Customary tenure or use rights	3.91	4.19	3.85	3.67
I.24 Indigenous people	4.14	4.16	3.82	4.00
I.25 Illegal and unauthorized activities	4.09	4.39	4.40	3.88
I.26 Planning and implementation	3.83	4.16	4.45	3.69
I.27 Access to natural resources	**4.27**	**4.15**	**4.13**	**4.00**
I.29 Local processing and new markets	3.73	4.00	4.14	3.86
I.37 Encroachment and grazing	4.03	4.05	4.07	3.93

I.41 Sustainable utilization of NTFPs	**4.28**	3.92	4.09	3.89
I.47 Implementation of Joint forest management and leasing relations	4.04	4.22	4.10	3.86
I.48 Reforestation concept/Strategy	**4.38**	**4.40**	**4.40**	**4.20**

The results indicate that 50% of the indicators were rated as highly important out of 12 indicators based on the stakeholder preferences and 'Reforestation concept/strategy (I.48) was judged as most important. (See **Fig 4.3**)

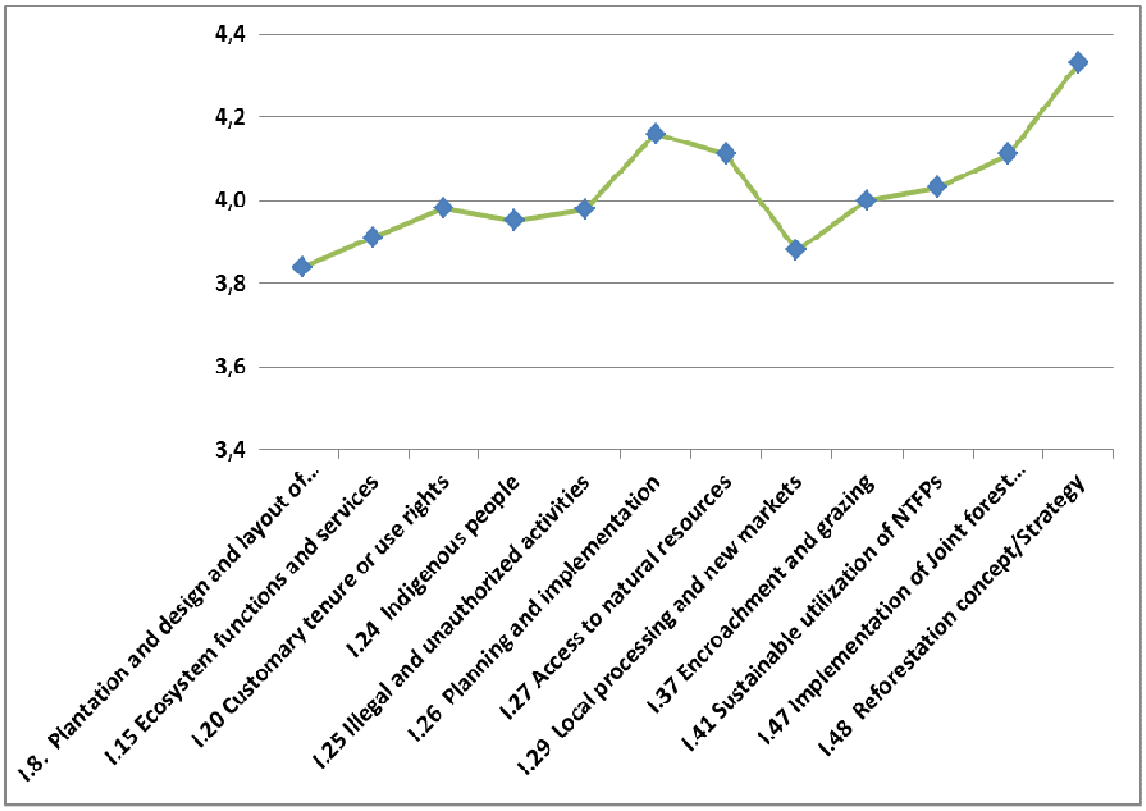

Figure 4.3: Overall important for the indicators of criteria 2 (Forest management and BiodiversityConservation), Tajikistan

4.4.3 Preference elicitation on Criteria Set 3 (Land Use, Biodiversity and Pasture Land Management)

Having a closer look at the overall applicability of all indicators under the Criteria Set 3 (Land Use and Pasture Land Management)**,** seven were judged as highly applicable out of 9 indicators at national level and Oblast level. Only two indicators were rated as highly applicable at Rayon level and surprisingly, all indicators were evaluated having low applicability at local level according to expert elicitation. The designation and implementation of Sustainable land management (SLM) projects (I.36) and the promotion for wildlife farming and hunting (I.43) were rated 4.41 and 4.32 respectively and had the highest applicability at

national level. The results indicate that the integration into land use planning and management (I.32) were judged with highest applicability at Rayon level.

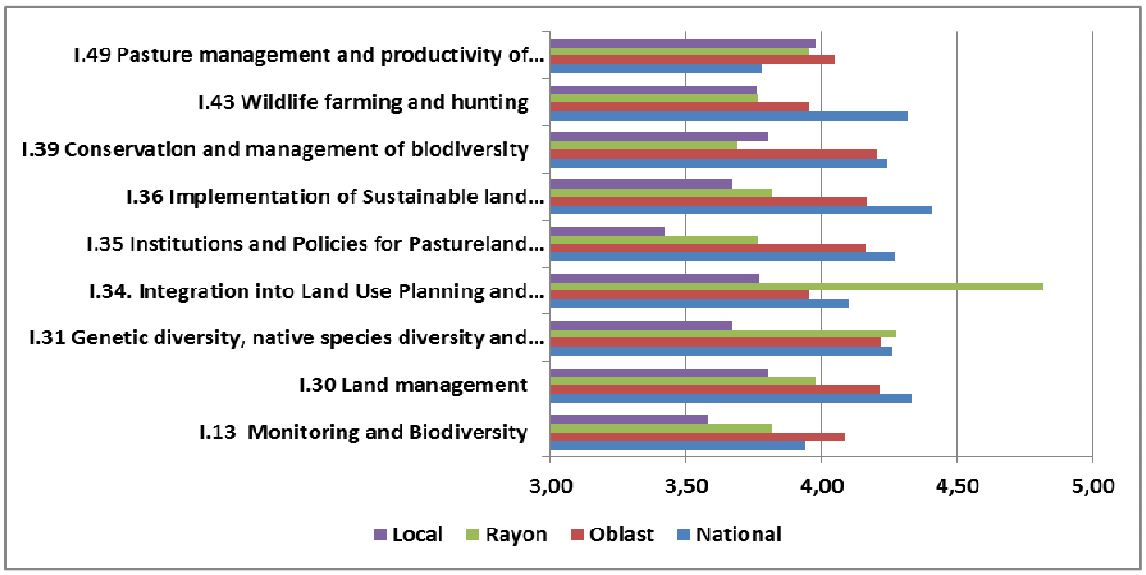

Figure 4.4.: Applicability at National, Oblast, Rayon and Local level by Stakeholder Preference elicitation for the indicators on Criteria Set 3 (Land Use, Biodiversity and Pasture Land Management), Tajikistan

The results indicate that the indicators I.30, I.31, I.36, I.39, I.43 and I.49 were judged as highly important under the Criteria Set 3 (Land Use, Biodiversity and Pasture Land Management) based on the overall judgment of experts. In general, the most promising indicators under this category: 'Conservation and management of biodiversity (I.39) and ' Maintenance of pasture rotation, grazing control and management of livestock farming resources (I.49)' were judged with the highest importance out of nine indicators (Fig 4.5).

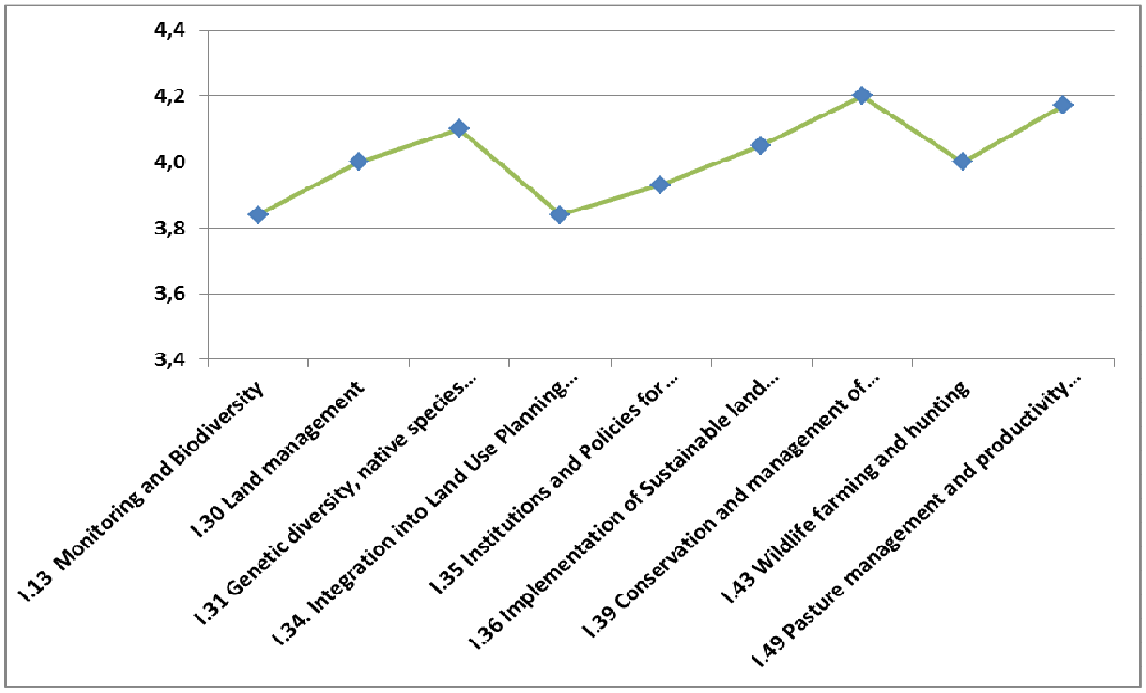

Figure 4.5: Overall importance by Stakeholder preference for the indicators on Criteria Set 3 (Land Use, Biodiversity and Pasture Land Management), Tajikistan

4.4.4. Preference elicitation on Criteria Set 4 (Environment and Ecosystem Management)

Having a closer look at the overall applicability of all indicators under this Criteria Set 4 (Environment and Ecosystem Management), it becomes evident that the applicability of indicators at different geographical scales vary significantly. The indicators I.18, I.22, I.32, and I.5 were rated as highly applicable at national level with the scores 4.41, 4.40, 4.35 and 4.0 respectively. The importance of awareness strategy for conservation, secure and sustainable environment (I.42) was judged as highly applicable only at local level. The results indicate that the strategy should be prioritized in order to reduce environment risks (I.2) and strengthen environmental governance (I.18). Both strategies were rated as highly applicable at all levels (**Fig 4.6**).

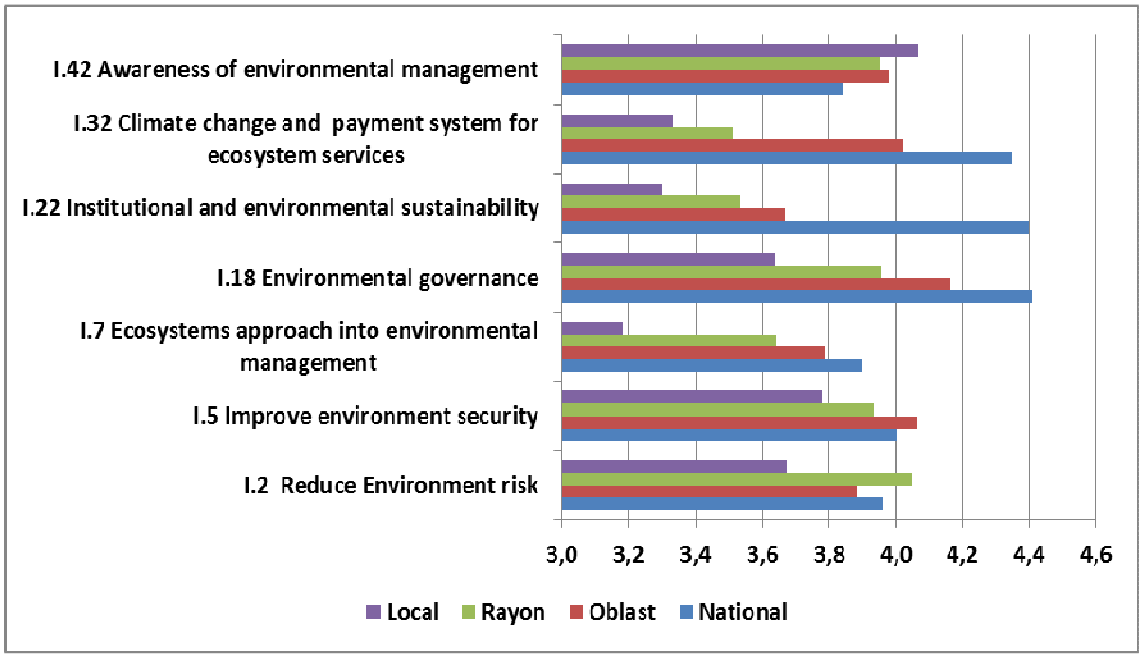

Figure 4.6: Applicability at National, Oblast, Rayon and Local level by Stakeholder Preference elicitation for the indicators on Criteria Set 4 (Environment and Ecosystem Management), Tajikistan

The results indicate that only those two indicators showed high importance under the category Criteria 4 (Environment and Ecosystem Management). The results indicate that the indicators I.42 and I.18 are most important (Fig **4.7**)

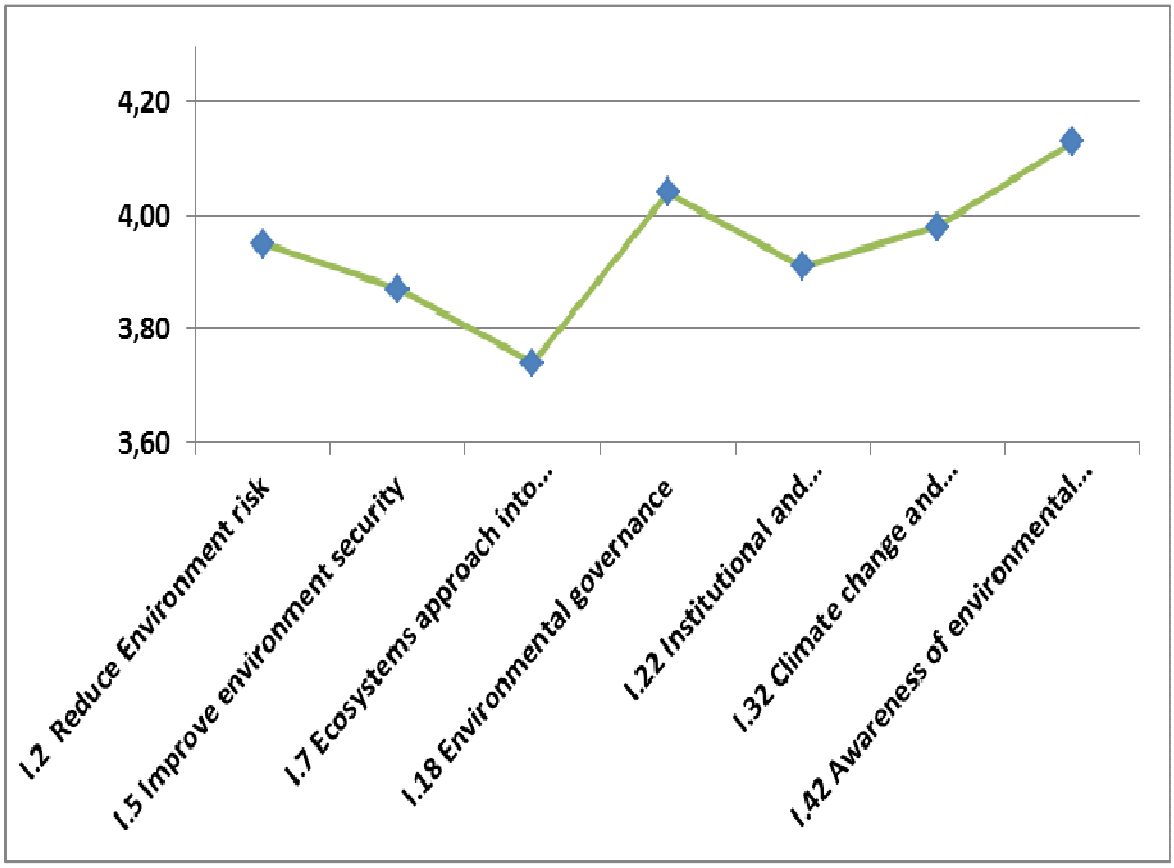

Figure 4.7: Overall importance by Stakeholder preference for the indicators on Criteria Set 4 (Environment and Ecosystem Management), Tajikistan

4.4.5 Preference elicitation on Criteria Set 5 (Livelihood Promotion)

Based on the average ratings for Criteria Set 5 (Livelihood Promotion), the indicator 'income generation activities (I.17)' was the only one that was judged as highly applicable at all geographical levels. At national level, I.28, I.23, I.44, I.17 and I.9 were rated as highly applicable. Interestingly, the indicators 'Use of the Sustainable Livelihood Framework (SLA) (I.6)' and' Comparative assessment of the impact of economic activity (I.33) were judged with low applicability at all levels. At Oblast level, the indicator 'Foster equitable land distribution (I.44) was rated with highest applicability out of seven indicators under this category. Likewise, the indicator 'income generation activities (I.17)' was the one judged with highest applicability at Rayon and local levels (**Fig 4.8**).

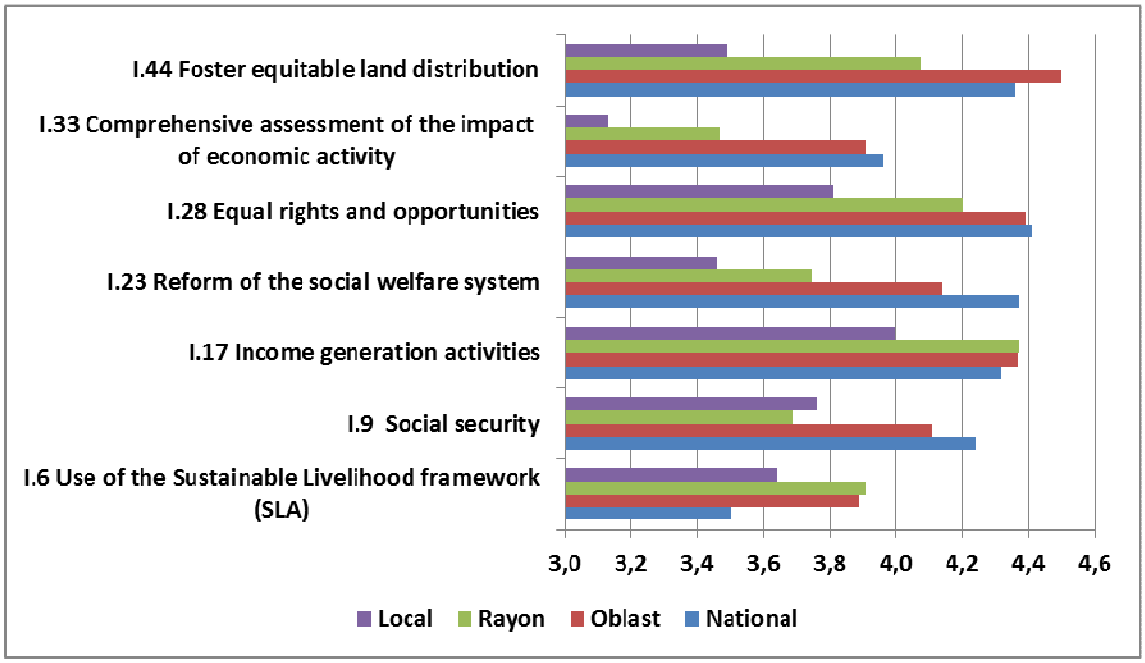

Figure 4.8: Applicability at National, Oblast, Rayon and Local level by Stakeholder Preference elicitation for the indicators on Criteria Set 5 (Livelihood Promotion), Tajikistan

Based on the overall judgment of the stakeholders' preference, the indicators I.28, I.17, I.44 and I.23 were rated as highly important and the rest of indicators was rated with low importance (**Fig 4.9**).

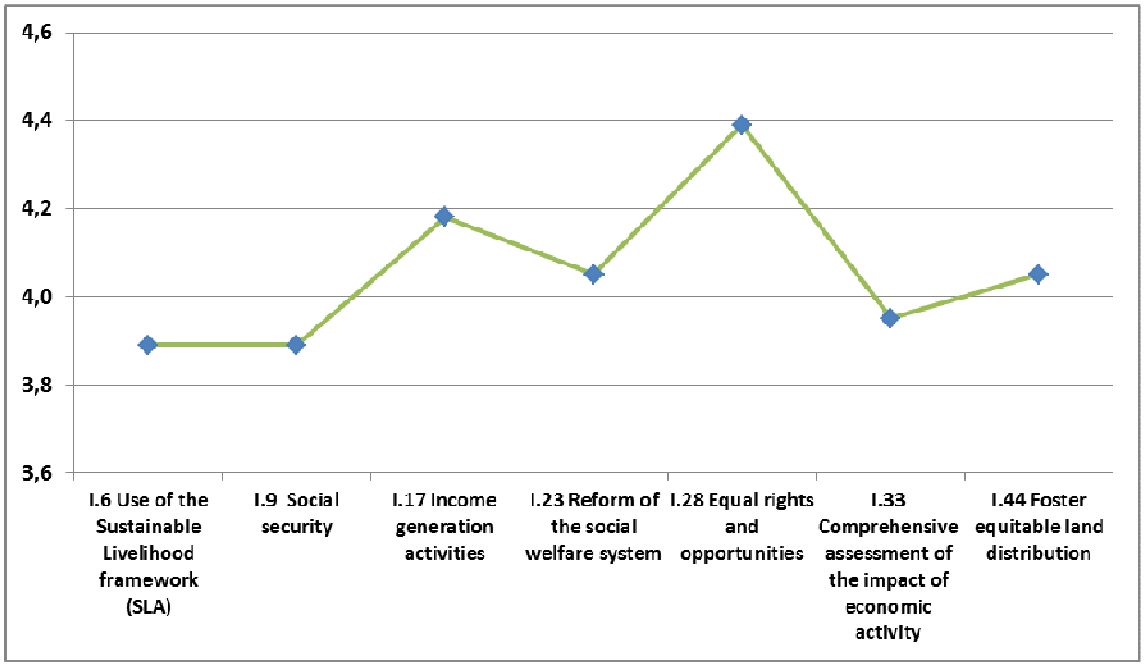

Figure 4.9: Overall importance by Stakeholder preference for the indicators on Criteria Set 5 (Livelihood Promotion), Tajikistan

4.4.6 Preference elicitation on Criteria Set 6 (Co-ordination, Co-operation and other cross-cutting issues)

The results indicate that out of eight indicators, seven indicators at national level, five indicators at Oblast level, four at Rayon and only one indicator at local level were judged as highly applicable under category 6 (Co-ordination, Co-operation and other cross-cutting issues). Having a closer look at all levels, it is evident that the indicators 'involvement of private sector in the sustainable management of natural resources (I.14)' and ' power and voice (I.40) were rated as highly applicable at all levels. The results indicate that 'Tran-boundary co-operation (I.50)' seems to be mostly applicable at national level, whereas 'Transparency in decision-making, annual programme and budget (I.51)' and 'Power and voice (I.40)' were most applicable at Oblast and Rayon levels out of eight indicators under this category (**Fig 10**).

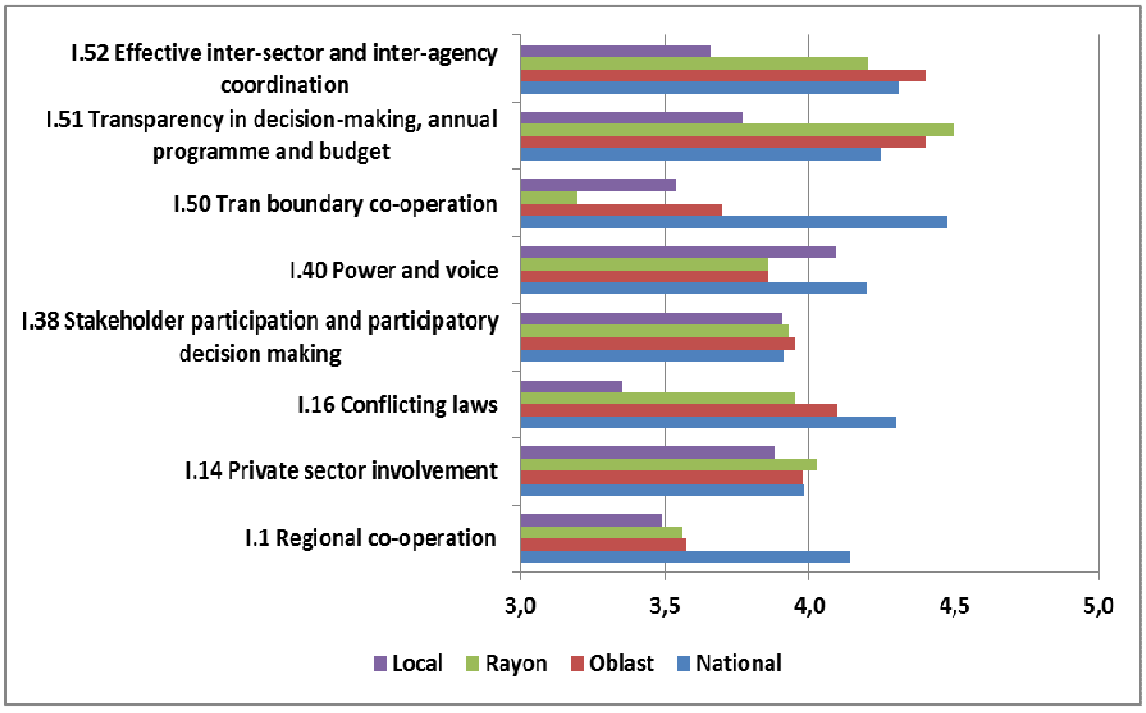

Figure 4.10: Applicability at National, Oblast, Rayon and Local level by Stakeholder Preference elicitation for the indicators on Criteria Set 6 (Co-ordination, Co-operation and other cross-cutting issues), Tajikistan

The results indicatethat there are three indicators showing high importance under the Criteria Set 6 (Co-ordination, Co-operation and other cross-cutting issues). According to weightage, the indicators I.51, I.40 and I.38 were judged as highly important (**Fig 4.11**)

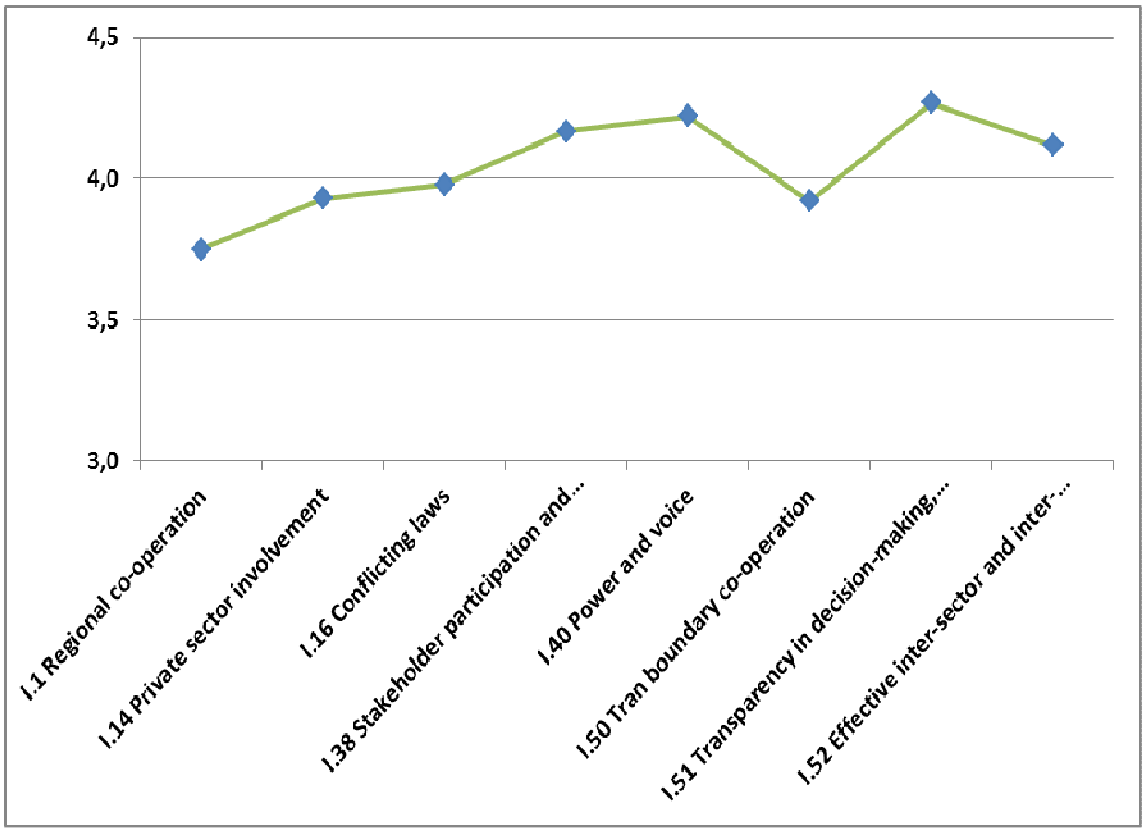

Figure 4.11: Overall importance by Stakeholder preference for the indicators on Criteria Set 6 (Co-ordination, Co-operation and other cross-cutting issues), Tajikistan

4.5 Assessment of Problems, Activities and Recommendation for National Action Plans

Based on the findings above, all highly important and highly applicable indicators at the national level were discussed at national workshops and they have been assessed according to problems/issues identified, activities and recommendations were proposed according to each indicator on Criteria level.

4.5.1 Assessment of Problems, Activities and Recommendation on Criteria Set 1 (Disaster Risk Management), Tajikistan

Problems/Issues	Activities	Recommendations
I.3 Community-level activities and Hazard, Vulnerability and Socio-Risk Assessment		
Need to improve policy processes and to recognize Community-level activities and Hazard, Vulnerability and Socio-Risk assessment as essential components of the disaster risk reduction. Social and economic impacts have not been studied adequately and are difficult to measure in dynamic contexts (e.g. knowledge, attitude, skill, political scenarios).	Prepare and implement a Village Disaster Management plan. Allow risk plans and information provision to be updated regularly (e.g. Natural and Hazard Map, risk mapping). Implication of HSVRA approach at regional and local levels. Develop community-based disaster risk management models and methodologies.	Develop DRR management models and methodologies at regional, local and community levels for facilitating vulnerability assessments. Study and recommend, based on stakeholder analysis, vulnerability assessment and investigate power dynamics, institutional re-arrangement, gender, equity, equitable distribution pattern. Develop a legal framework for implementation of Strategy and Assessment results. Promote community-based measures. Determine and recognize community-level activities as essential components of the disaster risk reduction.
I.4 Assessment of risk zones and monitoring		
Improve and access data and joint research efforts (droughts, wind erosion, Seismic risk zone, risks from landslides, mudslides and avalanches. Improve meteorological networks and ground reality. Highly prone to flood risk at river basins and other locations. Inadequate information and data collection capacity in accordance with international standards.	Support technical advances, improve modeling and forecasting applications. Improve monitoring systems for evaluation of risk. Strengthen capacity for monitoring at all national and district levels. Select priority sites and areas for preventive measures to increase safety of population and land from natural hazards. Support technical advances in identification and evaluation of risk and improve monitoring systems for evaluation of risk.	Strengthen capacity for monitoring at all national and district levels. Develop strategy and priority measures in order to reduce environmental risks. Review the scope and depth of different geographic information systems (GISs) and databases available in the country that could support disaster risk management. Improve data base and monitoring systems, including satellite remote sensing for particularly dangerous sources of disaster risk (glacial lake outbreaks, landslides, avalanches, weather forecast, parameters of main

		watercourses). Modeling for flood risk map, river basin management.
I.10 Integration of DRM and national land use and land planning policy		
Lack of efficient monitoring of services provision on the basis of qualitative, valid information, as well as fragmentation of responsibilities on the national and local levels. Lack of unified disaster risk management policy. Insufficient institutional capacity to use DRM integration principles in development and implementation of the national land use and land planning policy.	Prepare guidelines on DRM integration into land use plans. Analysis of the existing legislation of the Republic of Tajikistan. Integrate Disaster risk management issues into the process of development of the national policy and decision-making related to land use and land planning. Production of maps in order to stimulate adequate land use and planning. Provide training of staff.	Regular review and refinement of DRR & DM national action plan linked to national development plan and budget processes, meeting the government's commitment to the international and regional initiative. Revise infrastructure development planning and approval guidelines in all sectors to reflect requirements for hazard and risk assessments. Ensure that DRR is a national and a local priority with a strong institutional basis for implementation.
I.11 Disaster Preparedness and Response		
Lack of uniform plan in case of a disaster. Preparedness and response plan for recovery. Lack of capacity to provide timely response and lack of co-ordination of disaster management capacity.	Training of professionals for specific disaster preparedness and plans. Review specific disaster preparedness and response plans. Inter-sectoral working group and volunteer team formation. Preparation of the disaster preparedness and plans at the national, regional and district levels. Establishment of the National DRR Platform.	Develop National Disaster Preparedness and Response Framework. Focus on emergency response and restructure rather than prevention and adaptation. Development of the specific disaster preparedness and response plans.

I.12 Public awareness programme for disaster reduction		
Lack of special tool kits and manuals and lack of willingness to campaign to raise public awareness about disaster risk reduction.	Prepare Training manual and kits. Develop Guidelines for public awareness programme. Building understanding and awareness of disaster prevention including such activities as providing user-friendly information and training on risks and means of protection.	Establish nationwide infrastructure to increase awareness of disaster risk reduction methods. Strengthen the stakeholders' capacity for monitoring at all national and district levels. Promoting dialogue between different stakeholders from communities, disaster experts, scientific specialists, urban planners and government departments.
I.19 Scientific research team		
Insufficient collaboration and networking within scientific research team from diverse disciplines: DRR, forestry, emergency, social/economic science. Lack of common understanding between scientists, policy makers and scientists to integrate poverty reduction, DRR and environment protection.	Functional and Research council with diversified scientific research team. Capacity assessment and sources of funding. Develop common understanding and improve integration between poverty reduction, DRR and environment protection.	Establish research council with representatives of diverse disciplines of science. Develop scientific research project linking on disaster risk management, poverty and environmental management programme.
I.21 Early warning systems		
Irregularity in assessment of early warning systems and upgrading and enhancing early warning capacity and improvement of the existing early warning systems.	Assessment of the existing early warning systems. Establishment of early warning systems. Introduction of the systemic standardized process of selection, analysis and shared use of data, maps, information on hazard trends and vulnerability factors. Prompt warning system for the relevant disaster response services and public about potential disasters. Determination of needs in training and establishment of the early warning capacity to improve community awareness of disaster events, community preparedness	Identify, assess and monitor disaster risks and enhance early warning. Improve modeling and forecasting applications. Support technical advances, improve modeling and forecasting applications. Review monitoring capabilities for each hazard category, including the distribution of appropriate monitoring stations and filling gaps in technical expertise in data analysis and forecasting. Prompt warning of the relevant disaster response services and public about potential disasters.

	and practical household response strategies for each type of disaster event.	Review the end-to-end warning system for each disaster category, to identify how to strengthen monitoring, the generation of appropriate information and the communication of early warnings to communities.

4.5.2 Assessment of Problems, Activities and Recommendation on Criteria 2 (Forest management), Tajikistan

Problems/Issues	Action plans	Recommendations
I.15 Ecosystem functions and services		
Lack of nation-wide SLMM plan, knowledge in SPNA program and irregular ecological assessment and capacity building program. Lack of reliable resource data: thus difficult to estimate the production, protection functions of ecosystems.	Ensure the sustainable management of land resources. Preserving biodiversity both within Specially Protected Nature Areas (SPNA). Extend SPNA and introduce integrated water resources management and cut emissions of greenhouse gases, determine ecological capacity of areas. Identify key areas for ecosystem research. Proper resources use and of conformity with environmental legislation, fight against illegal cutting and poaching.	Ensuring the integrity of ecosystems and their components is a primary task sustainable livelihood and natural resources management. Awareness raising program for ecosystem function. Apply ecosystem based adaptation strategy for natural resources conservation. Enhancement of the adaptive capacity and livelihood opportunities for people living in mountain regions through ecosystem services. Improvement of legal framework and international and trans-boundary cooperation in biodiversity conservation, poaching control and environmental education. Biodiversity management and strategy plan and mainstreaming of environmental knowledge.
I.24 Indigenous people		
Lack of clear definition and process to identify the indigenous people.	Provision of legal rights and certificate. Forest management plan and areas marked on maps. Documentation of traditional, cultural, religious, economic and ecological importance.	Identify indigenous people with customary/traditional rights to forest resources. Land use rights to indigenous communities. Investigate the constraints that limit the ability of mountain people, especially indigenous people, to reap the full benefits of their unique environment.

25. Illegal and unauthorized activities		
Improper mechanism for controlling illegal harvesting, encroachment, illegal settlement and other unauthorised activities. Fuelwood is in high demand, in particular during the winter in rural areas. Inefficient heating and cooking devices in poorly insulated houses exacerbate the pressure on forest resources.	Authority instances and mechanisms, reward or punishment system.	Protect from illegal harvesting, encroachment, illegal settlement and other unauthorized activities.
I.26 Planning and implementation		
Lack of genuine participation, decentralization and devolution for forest management and planning. Low level of participatory forest management experiences and experimental studies.	Guideline for participatory forest management. Develop Communication strategy and feedback mechanisms. Guideline for co-management arrangements.	Provide legal rights to local communities for planning and implementation of forest management. Follow both hybrid approaches: Top down and bottom up approach. Apply adaptive forest management planning process for ecosystem management. Develop certain policy documents and adopt a holistic approach to planning by covering multi-sector and multi-stakeholder approach.
I.27 Access to natural resources		
Lack of Legal framework to protect and access forest and forest resources (e.g. land use right certificate, customary rights, or lease agreements). Lack of land-tenure security and forest ownership awareness.	Ownership of land use right certificate. Registration status. Agreement with authorities.	Clearly define access to natural resources. Awareness raising for forest development and extension of forest areas. Promote Sustainable and efficient use of land, water and forest resources.
I.37 Encroachment and grazing		
Lack of enforcement and legal provisions to penalty. Free grazing practice and improper livestock management. Open access triggers the exploitation of	Guideline for enforcement procedure. Protect illegally encroached areas. Develop livestock management guidelines and strategies.	Develop strict procedures to control encroachment, grazing and illegal exploitation of forests. Implement rangeland and pasture land management policy effectively.

forest resources, mainly for fuelwood and through overgrazing. Large-scale rearing of low productive livestock, uncontrolled and unregulated livestock population and grazing areas, abuse of customary grazing rights, and lack of awareness of the importance of regulated livestock rearing and stall-feeding. Need for easy grazing access and the need to go downstream during the excessive cold seasons. Conversion of forest land to agricultural land.		Proper livestock management for increased productivity and economic benefits rather than large-scale rearing of low productive livestock.
I.41 Sustainable utilization of NTFPs		
Need of necessary knowledge for the sustainable utilization of NTFPs. Lack of knowledge about appropriate FM and NTFPs management and technologies.	Task team for NTFP management guidelines. Review and refine the NTFP policy guidelines. Study on value change method of NTFPs Prepare Harvesting guidelines.	Develop management guidelines for NTFPs. Prepare details of value chain study for NTFPs and initiatives of certification process. Prepare training manual for sustainable forest management and sustainable utilization of NTFPs. The policy review and amendment of regulations respecting the use, protection, management and harvesting of medicinal plants and minor forest products pursuant to the Forest Act.
I.47 Implementation of Joint forest management and leasing relations		
Lack of pilot study on joint forest management initiatives and lessons learnt from whole country. Issue of people participation in forest management.	Pilot and experimental plot for Joint Forest Management. Formation of commissions or task teams to formulate rules, regulations, guidelines. Development of Joint Forest Management Operational	Develop general regulations on the joint forest management procedures. Introduce community and water users' associations for sustainable and equitable use of natural resources. Promote community participation as important means of

Lack of knowledge about JFM and SFM and limited forest areas. Lack of common framework on Joint Forest Management. Mainstreaming the local participation in planning and management of Forest.	Guidelines. National platform for mainstreaming JFM and other similar kinds of initiatives.	protecting and implementing forest management. Ensure to implement joint forest management and leasing relations. Develop the elements, criteria and indicators for SFM as well as Pamir ecosystem management. Develop the elements, C&I for Sustainable Land Use Management.
I.48 Reforestation concept/Strategy		
Legal provisions and strategy of Reforestation. Insufficient budget and skilled manpower. Lack of funding in forest development. Lack of skilled manpower and concerned expert/specialist.	Campaign for Reforestation/Afforestation. Establishment of demonstration plot and nursery establishment at community, local and regional levels. Maintain documents for community of practice and best practice for reforestation strategy.	Develop nationwide reforestation concepts and strategies. Allocate sufficient budget and technical assistance based on scientific knowledge.

4.5.3 Assessment of Problems, Activities and Recommendation on Criteria Set 3 (Land Use, Biodiversity and Pasture Land Management), Tajikistan

Problems/Issues	Activities	Recommendations
I.30 Land management		
Lack of monitoring system to assess the desertification process and environmental aspects, and, rehabilitate degraded pastures. Need of scientific land reform policy.	Support a sustainable mechanism for coordinating activities to combat desertification. Introduce pasture conservation methods. Optimization of use of arable land for main crops.	Improve and coordinate legislation on land management in order to establish the institutional conditions to successfully combat desertification. Commissions for the land re-form policy through multi-stakeholder and political process. Development of a comprehensive sustainable land management plan. Introduction of soil conservation and water conservation.

		Promotion of area-based integrated land use planning.
I.31 Genetic diversity, native species diversity and endangered species		
Lack of prevention for maintaining genetic diversity, native species diversity. Ineeffective measures to conserve rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Improper mechanisms for controlling illegal and inappropriate hunting, trapping and harvesting.	Use of natural regeneration and of scientific-based seed transfer. Conduct Biodiversity survey and develop biodiversity measures.	Maintain genetic diversity, native species diversity and conserve rare, threatened and endangered species.
I.34. Integration into Land Use Planning and Management		
Improper land use distribution and quality of land. Separate the pasture land and fuel wood energy with the establishment of sustainable forest management. High dependency of rural population on land resources. Scarcity of land resources and issues of proper land management. Inappropriate land use and farming practices.	Assessment of County's land resources and its scientific distribution ratio. Update Poverty Assessment and its driving factors. Formulate Rural Development Strategy plan. Rehabilitate and protect field belts.	Formulate and integrate planning and management into land use. Develop Rural Development Strategy with an account. Land conservation has an important place - improving livelihoods. Development of local government led participatory comprehensive district level land use plan. Ensuring equitable benefits for the local people in management of unused public land. Allocation of certain areas to landless and poor within broader framework of Joint Forest Management (JFM).
I.35 Institutions and Policies for Pastureland Management		
Not enough mobile SLM training centers. Lack of assessing the carrying capacity of the lands. Weak administrative and managerial capacities of the lezkhoz.	SLM training/ community center.	Creating institutional and policy pre-conditions for investments in pasture rehabilitation. Institutionalization of incentive-based grazing and seasonal practice for grazing in ecologically vulnerable

		areas.
I.36 Implementation of Sustainable land management (SLM) projects		
Need to recognize as a budget category in relevant ministries and in PIP. Tremendous efforts to develop the SLM policies and guidelines. Lack of common understanding on SLM framework.	Review of PRSP and the role of SLM. Completion and endorsement of policies. Sensitization of SLM policies and its activities.	Improve the capacity to integrate SLM considerations into the operations and budgets and to design and implement SLM projects. Recognize and formulate policy frameworks for sustainable management of pasturelands, rainfed lands and forests in the PRSP.
I.39 Conservation and management of biodiversity		
Need of public-private partnership in use and management of natural resources. Lack of public debate on Biodiversity conservation. The lack of awareness and conservation strategies. Overgrazing, poaching, and illegal trade in floral and faunal species.	Campaign of Awareness raising program. Develop policy on Public-private partnership.	Promote conservation and proper management of biodiversity. Develop public-private partnership mechanisms with a view on promoting environmental sustainability. Implement measures to preserve specially protected natural areas and restore forest resources and pastureland.
I.43 Wildlife farming and hunting		
Not clear policy on wildlife farming and hunting. Lack of functional guidelines on hunting and licences. Low level of awareness and capacity for wildlife farming and development.	Develop policy guidelines for wildlife farming. Update biodiversity assessment and carrying capacity for hunting. Develop wildlife management plan and hunting procedure and plan.	Promote measures for wildlife farming and hunting. Develop legislative text for wildlife farming and hunting and the harvesting of wild produce. Support and assist local people and their organizations in creation and maintenance of wildlife biological corridors to minimize human-wildlife conflicts. Promotion of wildlife farming with appropriate incentives.
I.49 Pasture management and productivity of livestock		
Lack of scientific knowledge on Pasture management.	Prepare Pasture land management guidelines and strategy plans.	Ensure sustainable pasture management and enhance productivity of livestock farming.

Lack of true data of livestock. Lack of normative act. Improper policy and lack of budget allocation from Government. Risk of increased number of livestock. Quality of livestock and service centers.	Prepare Improved livestock farming guidelines. Engagement association groups for pasture management and market linkages for productivity.	Enhancement of farmer's knowledge and skills. Introduction of community based pasture management. Creation of marketing and associations for mutual support and management of livestock. Development of processing, storage, and marketing of agriculture products. Promoting local institutionalization for range land management and livestock development program. Optimization of management practices for pastures near villages (maintenance of pasture rotation, grazing control, weed control etc.). Awareness building and capacity development and initiative pilot project for 'learning for sustainability'.

4.5.4 Assessment of Problems, Activities and Recommendation on Criteria Set 4 (Environment and Ecosystem Management), Tajikistan

Problems/Issues	Activities	Recommendations
I.5 Improve environment security		
Lack of political will to improve environment security to ensure sustainable development with minimum negative impacts to environment. Overlapping contradictory provisions have been formulated based on various principles of law and a large volume of reference norms and gaps. Lack of balanced mechanism for regulating environmental tax policies and irrational use of natural resources and degrading the state	Mine clearance program allowing extensive land to be taken back into use for farming and development. Increase fees, tariffs and fines for environmental pollution.	Promote sustainable natural resources management and community involvement for the resources management. Introduce the ecosystem and adaptive management approaches into environmental management. Develop and implement appropriate conservation measures aimed at the timely prevention of potential natural and manmade disasters.

of the environment.		
I.18 Environmental governance		
No analysis of the impact of the privatization process on the environment. No state system to monitor and measure environmental status of natural ecosystems and resources.	Develop legal and policy framework for forest governance. Upgrade the environmental monitoring system. Promotion of Participatory land use plans.	Strengthening environmental governance and taking into account trans boundary impacts, as a result of economic activity of the country. Create a favorable legal and investment environment and involve private sector in the conservation and sound use of natural resources.
I.22 Institutional and environmental sustainability		
Lack of effective mechanism for coordinating interaction between state bodies, natural assets and sector of civil society.	Priority of program and government fund and foreign aid. Environmental monitoring system. Policies, plan and action plans.	Strengthen institutional potential with a view on promoting environmental sustainability.
I.32 Climate change and payment system for ecosystem services		
Newly introduced concept of climate change and payment for ecosystem services and lack of common understanding of these concepts. No mechanisms for introducing an environment tax and abolishing cross subsidies.	Conduct Climate Change Studies. Conservation, education, training and public information research, inventory and directed studies. Establishment of rehabilitated ecological monitoring posts. Develop PES guidelines and mechanisms.	Develop the norms necessary for adaptation to climate change and introduce payment system for ecosystem service. Strengthen the Centre for Climate Change Studies; rehabilitating mountainous.
I.42 Awareness of environmental management		
Need of study on linking EM and livelihood and make a common understanding and allocate sufficient budget for public awareness. Inadequate funding for environmental protection measures is aggravated by poor environmental awareness among those using natural resources.	Develop EM management guidelines and its Campaigns. Conduct training, workshop related community based natural resources management.	Develop awareness strategy for conservation, secure and sustainable environment.

4.5.5 Assessment of Problems, Activities and Recommendation on Criteria Set 5 (Livelihood Promotion), Tajikistan

Problems/Issues	Activities	Recommendations
I.9 Social security		
Lack of policy process for integration and reflection of social, gender and governance policies (local, national, regional and networks). Lack of trained specialists, insufficient coverage of social services types, lack of interest in their provision by local self-governance bodies.	Equal distribution of income from natural resources use and access to them. Develop and implement PRSP, Gender and social inclusion policy.	Promote social security especially for identified deprived, asset less and marginalized communities. Mechanism for implementation of the innovation system development state policy throughout the country: formation of integral organization, legal, economic and other forms of innovation encouragement, support and regulation, increase of the off-budget resources sharing as innovation project.
I.17 Income generation activities		
Lack of potential for long term livelihood security. Duplication of activities by service providing and development agencies.	Establish demonstration plots and model sustainable livelihood options (beekeeping, medicinal plant production.	Develop and introduce into practice measures enabling interconnection of local communities needs' satisfaction with integrity of the environment. Integrate mechanisms of improved sectorial coordination of natural management and environmental management. Extension services and other interventions should take into account constraints placed on women's participation and income earning opportunities and full involvement in natural resources management are means to ensure effective and appropriate design and implementation.
I.23 Reform of the social welfare system		
Lack of a clear definition of the authorities of agencies responsible for the development, implementation and regulation of social welfare policies particularly to vulnerable segments of the population and plans.	Data of employment, migration and social security services. Social Welfare Fund and banks. Restoration and reinforcement of social service institutions.	Plans to enact and implement reform of the social welfare system to take account of the conditions of the market economy. Increased representation of women and men at the decision-making level in government agencies.
I.28 Equal rights and opportunities		
Lack of empowerment of local people to	Gender sensitivity and strategy plan.	Develop strategies to eliminate gender inequality and

exercise their rights to services. Gender issues have not been adequately addressed in the principal government strategies and institutional gender policy mechanisms are limited. An ineffective statistical base and data collection systems are limiting opportunities to advance the cause of gender equality. Women's opportunities to protect their own interests are extremely limited both at the level of society as a whole and at the local community and household levels.	Number of increased representation of women at the decision-making level. Ensuring equal access for men and women to resources in the entrepreneurial sphere. Eliminating gender inequality in the development of human potential.	provide equal rights and opportunities. Social partnership mechanisms should be properly developed to allow for cooperation among the state, civil society and businesses in the implementation of gender policy. Raising the educational level and competitiveness of women entrepreneurs. Eliminating gender stereotypes in the public consciousness with regard to equal rights and opportunities.
I.44 Foster equitable land distribution		
Lack of special plan, agricultural research, extension and education towards improving farming systems and land management practices in marginal or fragile lands. Unequal access to resources and control over resources (property, land, credits, and so forth).	Conduct awareness raising program. Conduct research, extension and education.	Fostering equitable land distribution and agriculture intensification to reduce pressure to settle marginalized lands. Raising the educational level and competitiveness of women entrepreneurs.

4.5.6 Assessment of Problems, Activities and Recommendation on Criteria 6 (Co-ordination, Co-operation and other cross-cutting issues), Tajikistan

Problems/Issues	Activities	Recommendations
I.1 Regional co-operation		
Lack of common understanding and information on cross-border initiatives. Limited cross-sectorial co-ordination especially at national level. Lack of proper legal framework and absence of CA regional cooperation framework.	Prepare regional co-operation strategy. Develop vision and attempt to establish Central Asia regional co-operation as in the European Union.	Review legislation, identify forms of regional cooperation and conduct comparative study of other countries' experience. Provide technical support for policy formulation at regional level for example by creating or supporting

	Establish Central Asian regional platform of all countries and relevant donors.	regional policy forums to tackle issues at a regional level.
I.14 Private sector involvement		
Lack of policy and enabling environment of partnerships between government and the private sector on a mutually beneficial basis. Trend of reducing investment for the environment protection and rational use of natural resources.	Introduce and disseminate best practices of sustainable natural resources use by the private sector. Active participation of civil society, local self-governance bodies and business circles in the preparation, discussion, approval and implementation of important decisions in the field of environmental protection and rational natural management.	Encourage the private sector and business partners in the Central Asia to adopt policies to ensure only legal provisions and follow the rule of law in any kinds of supply chains: timber and non-timber productions.
I.16 Conflicting laws		
Overlapping contradictory provision and conflicts between national and local laws. Many laws (draft laws) contain sectorial or corporate interests, which contradict state policy. Unclear legal framework regarding responsibilities and jurisdiction. Insufficient principles of decentralization of nature protection management. Weak law-enforcement capacities and infrastructure.	Active regulatory bodies and other stakeholders. Establish conflict resolution mechanism. Establish networking to review the regional and national level conflicting law and possible actions.	Evaluate and develop mechanism to address conflicting laws. Setting up regularly active public council and expert working groups under the republican and regional management bodies as a priority measure to involve the public in making and controlling the implementation of decisions.
I.38 Stakeholder participation and participatory decision making		
Lack of provisions of budgets for NGOs involvements as facilitators in Program's activities. Less percentage of women represented in the decision-making and implementing program's activities.	Promote participatory forest management.	Widening participation in decision making and contribution to SLM by civil society and other stakeholders. Simplification of natural management permissive system. Enhancing environment regulation enforcement.
I.40 Power and voice		
Need for local participation in forest management. The local voice in planning and decision making is not recognized.	Pilot program for Participatory forest management.	Access to good land and women's access; access to good land and productivity of land; ability to decide how to use and manage natural resources. High level policy forum with formal intergovernmental agreement on environmental protection, research,

		monitoring and other joint intergovernmental environmental projects. Organizing international and regional workshops and conferences to discuss issues of biodiversity conservation and restoration. Building confidence of local users as real managers of local resources. Improvement of legal acts and provisions and their effective use in trans boundary relations.
I.50 Tran boundary co-operation		
Limited political commitment, co-ordination, leadership or formalization of policy within prescribed way. Need of a trans-boundary land use agreement. Lack of regional level planning and short term objectives. Lack of integrated regional development program; environment and social program is chaotic and unregulated and enforcement of the laws is ineffective.	Initiatives of trans-boundary platform and exchange knowledge. Conduct exchange program to share research knowledge. Conduct more trans-boundary research (SLM, water, DRR, NRM).	Increase funding, regional partnerships and coordinate financial tools. Use of existing resources for trans-boundary regions; water and energy. Knowledge sharing and exchange program. Assist concerned member countries in transmitting the research results to policy makers and to reach policy platforms.
I.51 Transparency in decision-making, annual programme and budget		
Lack of a transparent public audit system. Lack of proper mechanisms for ensuring participatory decision making at all levels of natural resources and environment management.	Targeted sensitization campaign. Information and communication strategy. Public auditing system.	Ensure transparency in decision making processes. Awareness of policy and strategy of all concerned stakeholders.
I.52 Effective inter-sector and inter-agency coordination		
Lack of understanding of benefit of inter-sector and inter-agency cooperation. Lack of transparent execution of decisions with the maximum possible participation of agencies and sectors, lack of monitoring and evaluation based on participation, and lack of efficient feedback.	Legislative amendment and country's commitments. Public awareness program (outreach and ecological education). Introduce common standards into the system. Effective knowledge management platform.	Promote dialogue between different stakeholders from communities, disaster experts, scientific specialists, urban planners and government departments. Organize in Central Asia the Coordinating Committee to study and disseminate successes in the area of NRM. Improve the understanding of strategic and cross-sector and inter-cooperation policy issues based on existing

Lack of network development strategy for information exchange and capacity building at local level.		scientific knowledge and expertise.

CHAPTER 5

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

In this study, we categorized the 52 identified indicators into six categories : 1) Disaster Preparedness and Management, (2) Forest Management, (3) Land Use, Biodiversity and Pasture Land Management, (4) Environment Management, (5) Livelihood Promotion and (6) Co-operation, co-ordination and other Cross-Cutting issues. It is evident from the findings of study that more than 30 indicators were judged as highly important and most were highly applicable under the criteria 5 (Livelihood Promotion) and 6 (Co-operation, co-ordination and other cross-cutting issues). In total, more than 35 indicators at national level, 39 indicators at Oblast level, 27 indicators at Rayon and 14 indicators at local level were found more applicable. It demonstrated that the approaches support enhancement of a broader sense of thinking of regional co-operation, reforestation strategy, livelihood issues, good governance, power dynamics, gender, rights and equitable distributions. It can be concluded that SLNRM practitioners have their own perceptions and working definitions of areas including gaining a better understanding of attributes of livelihood and natural resources. It is worth restating that SL and natural resources management are a way of thinking and an approach to development not a clear-cut recipe for how we should proceed in dealing with complex poverty related issues. It emphasizes a dynamic learning process rather than a blue-print assessment. It needs a multi-layer analysis and cross-cutting demands from different disciplines or areas of development. The study recognized the concept of natural governance system. Particularly the rights, roles and responsibilities of diverse actors, which demand the appropriate and meaningful indicators, are problematic and must be developed with rigorous discussion with stakeholders from the beginning of the planning process.

The study found in the national strategy plans can serve as a reference to government and other involved parties willing to evaluate and to improve their services for improving livelihood of disaster-affected people, identify the gender gaps, institutional re-arrangement at all levels and achieve common understanding of livelihood and sustainable resources management. Regional co-operation strategy and research agenda, which were undervalued in the existing plans, should also be addressed. Therefore, these findings and conclusions can be considered as an essence to re/formulate and support the discussions on existing policy

processes as well as on new policy instruments for application in Central Asia and is based on the joint agreed vision, goals and action priority of respective countries and stakeholders. It is concluded that the political will and governance system is essential to implement and address the overall goal of sustainable livelihoods and natural resources and deal with complex issues of policy development and decision-making. In this regard, the regional and national policy should be formulated paying adequate attention to the local level with the help of local aspirations and their demands and its links with national and region (Oblast and Rayon) levels. All concerned actors from their respective countries must share the common vision, goals and set of regional agenda (e.g. trans-boundary co-operation and ecosystem management approaches at Central Asia) by ensuing sustainable use of resources and enhancing livelihood of local people living both upstream and downstream.

Delphi questionnaire was set up based on the existing policy and strategy documents of each country but it was hard to judge and specify the highest importance indicators or strategy for the specific countries. Although a structured questionnaire was provided in the Delphi process, some respondents made quite different interpretations and objected to specific questions/indicators, the use of terminologies or phrases when defining terms as well as to the lack of 'described' definitions. Some respondents complained that the number of questions or indicators was too high and some of them had difficulties to judge the relevance of the indicator or its data requirements. However, we found that the Delphi approach was easiest when managing a structured questionnaire survey as there is less room for varying interpretations. The method is feasible to get the ideas from diverse stakeholders but the trade-off analysis between stakeholders' opinions has been figured out based on the expert opinions. It dramatically reduced the potential for generating new ideas, the views from organizations, political ideology and objective judgment in closed questions. Reasons for the difficulties may lay in the high degree of uncertainty related to the complex issue of Sustainability (Mrosek et al. 2006). It was observed that personal attitudes of some experts and their affiliation to an organization affected the overall results which did not always reflect their experiences. Such misleading stereotypes can create impediments to the development of trust, relationship building and effective communication (Kearney *et al.*. 1998). The weaknesses of Delphi studies include the fact that they require much time and raise difficulties regarding coordination and communication for consensus building among experts. Most of the national strategy and the plan were developed without proper design to monitor the implementation mechanisms, therefore there is not enough evidence to demonstrate that

the common framework for developing strategy should be included in national strategy plans. Therefore, it is suggested to develop a common framework with monitoring mechanisms for the implementation strategy and a periodical assessment must be carried out. Some conclusions and policy implications are highlighted which are relevant at all levels and to a variety of different actors are highlighted:

- Absolute clarity, defined terminology and more description in how different concept and definitions of Disaster Risk Management, Forest Management, Land Use, Biodiversity and Pasture Land Management, Environment and Ecosystem Management, Livelihood and Regional co-operation issues are being used and interpreted in different contexts are needed to ensure that complex dynamic issue or most of cases cross-cutting issues are not confused and misrepresented.
- Greater policy attention to how livelihood and natural resources management strategies can help prevent poverty, natural disaster, forest and environmental degradation would be valuable. In many cases policy contribution to livelihood promotion, disaster risk reduction, forest, land use, environment, ecosystem management tended to be overstated but its major contribution to livelihood enhancement has been somewhat overlooked.
- The action plans should ensure the interests, perceptions, indigenous knowledge and innovation and access for poor people in order to use, protect and manage the resources on which they depend and put in place policies to conserve the components of livelihood and natural resources management on which poor people's resilience is based to contribute to poverty reduction.

5.2 Recommendations

The study reflects on, and recommends the development of a clear and coherent common agenda (or set of priorities) on SLNRM considering the perceptions and opinions of different stakeholders. The national action plans allow space for meaningful participation of local stakeholders including marginalized groups and take into account potentially differentiated perspectives and interests. NAPs should follow the guide to formulate their activities and plans by consultation process of several environment/forestry/social/DRR related government and non-governmental organization, NGOs, CSOs and CBOs. This action plans also encourage development of national action plans on DRR, forest management, land use, biodiversity, pasture land management, livelihood, environment management through multi-

layer and multi-stakeholder consultation process. It is recommended to identify the regional agenda with giving high priority and promoting regional co-operation through high-level consultation process in each country. The national co-ordination and expert-led team should be formed, which will create a high-level trust and facilitate the implementation, and prepare integrated plan or framework to support the sustainable natural resources management and livelihood promotion. For the specific regions like Pamir, the areas-based comprehensive strategies and plans should consider the elements of socio-economic, bio-physical, and cultural nature and link all technical and financial activities or programmes of agencies with other activities or programmes of other organizations in order to produce a synergetic effect and impact in the area. Likewise, facilitative activities such as research and training, advocacy and other innovative support services are also important in fostering effective sustainable livelihood and natural resources management systems.

The action plans must make full use of existing institutions and structures in the public as well as the private sector by avoiding the introduction of new governmental organizations and agencies wherever possible. It is recommended to encourage socially and environmentally responsible practices in the private sector, particularly companies operating from other countries, while considering the need for proper mechanisms to use and extract resource effectively. The national action plans should be focused and foreseen to be carried out over the next decade as an integrated global and national initiative that aims to enhance the management and use of resources, sustainable land user practices, participatory forest management, disaster preparedness and disaster risk management, considering afforestation and reforestation concepts/strategy as a way to improve livelihoods and sustain natural resources management.

Future strategy programme should be based on trans-boundary, biodiversity management, Sustainable Mountainous Land Management Model (SMLM) and climate change adaptation, social afforestation and reforestation strategy, community-based forest management strategy: e.g. Joint forest management or community participation in forest management. The general recommendations for national action plan are to:

- Revise/refine the current disaster risk management, PRSP, Environment, Forestry, Land Use policy, strategies and action plans in partnership with relevant stakeholders to increase ownership and to make it more effectively implementable.

- Due to the extremely diverse policy environment, which affects resources, and increasing demands on resources as well as challenges to addressing the demands of society, facilitation of the establishment of high-level collaboration between the science, community and key policy makers in the Central Asia should be strengthened. This provides an active and efficient science-policy interface and fosters an inspiring and dynamic science-policy dialogue for developing strategy on livelihood and natural resource-related issues.
- The mountain ecosystem directly or indirectly supports a large population of Central Asia regions in terms of diverse ecosystem goods and services. Therefore, there is a need to continue the supply of these products and services in a sustainable manner to maintain the ecological integrity of the area.
- Participating countries should focus on both research and development to take this initiative further through collaborative and multidisciplinary research with a clear focus on livelihood development and policy issues in relation to poverty and vulnerability in mountain areas.
- Identify and test the NRM and livelihood related policy questions to build a common understanding and solve the problems in an iterative and adaptive process to identify future directions and develop a vision, a mission, goals and strategies and to focus on the needs of Central Asian member countries and to adjust strategies to take changing circumstances into account.
- Periodic monitoring and assessment of programme priorities and resource allocations in line with national plans such as PRSP, Biodiversity Conservation Strategy, Sustainable Land Use Plan and national forestry sector plan in order to ensure effective implementation in the specific areas.
- Develop networking for regional capacity building, and policy and institutional support, capacity for sustainable livelihoods in border regions and tackle, through developing environmental processes and adaptation strategy, the promotion of cultural conservation, sustainable economic development, sustainable mountain tourism and income generation activities, issues of governance, policies, institutions, gender, and equity concerns.
- There still remains an urgent need for systematic research on the linkages between environmental stewardship, sustainable land use management, watershed management and risk reduction strategies, regional conflicts and stability in Central Asia as part of a regional environmental agenda. The cross-border initiatives and regional cooperation

on natural resources management that recognize the need to preserve something for the future should be built.

- Develop an appropriate and publicly available information dissemination system related to policies, legislation, directives, executive orders, relevant publications, data, programmes and projects at the center and in the districts.
- Encouraging partnership building between appropriate GOs, NGOs, CBOs, civil society organizations (CSOs), development agencies and private sector for effective planning, implementation of strategic interventions and monitoring of sustainable natural resources and livelihood promotion.
- Furthermore, the national action plans should consider both upstream and downstream population of the mountain area, which may appear more technical in nature, but is believed to lead to secure livelihood and well-being of the people of the area, while protecting their right to life and property.

Looking forward to Pamir regions, the identification of criteria and indicators of Pamir disaster risk, land use and ecosystem along with a comprehensive plan should be developed focusing especially on the present socio-economic and natural conditions. It is further recommend that the programmes of the different governmental and non-governmental agencies working in the region should be specific focused on the core Pamir areas instead of main accessible and urban areas. For instance, the donor communities, local institutions as well as central government agencies should realize the importance of Pamir regions and should give it priority in program and planning. More attention must be paid to the development of early recovery systems, infrastructure rehabilitation, development of comprehensive monitoring and forecasting models, and to the ensuring of the indefinite provision of basic services in the absence of a state-led alternative.]

The recommendation for developing a national action plans for Tajikistan is identified based on the key findings of the Delphi survey, face to face meetings with policy makers, experts and researchers, policy documents and the outputs of national workshops which were designed to make a significant contribution toward the vision, strategic objectives, and system-level outcomes. The recommendation is outlined and described according to the contributions in each category: DRR, Forest Management, Land use, Biodiversity and Pasture land management, Environment and Ecosystem management, Livelihood promotion and Co-operation, collaboration and other cross-cutting issues.

5.2.1 Recommendations for the Disaster Risk Reduction related Action Plans

Re-designing analytical framework of Hazard Social Vulnerability Assessment framework

The analytical framework of Hazard Social Vulnerability Assessment should be re-designed combining vulnerability analysis and stakeholder analysis, the nature of natural resources practices, gender and social roles, community power, dynamics of resources use and so on. A standardized framework for assessing vulnerability to climate change impacts should be developed.

Focusing on both Disaster preparedness and early recovery system

More attention must be paid to the disaster preparedness and the development of early recovery systems, infrastructure rehabilitation, and ensuring the indefinite provision of basic services in the absence of a state-led alternative. Such plans should focus on identifying, assessing and monitoring disaster risks, enhancing early warning and developing communication strategy to present these concepts in an accessible way in local language. A key recommendation would be to assess the need for an effective and decentralized multi-hazard early warning system, including the way of designing such a system, with regard to stronger monitoring, information analysis, communication, and outreach.

Preparing Mountain GeoRisk Assessment Model and forecasting

The 'Mountain GeoRisk Assessment Model should be prepared as well as forecasting, data sharing and early warning, coordination of disaster mitigation, preparedness and response, vulnerability assessment and enhancement of ecosystem and socio-economic resilience. The state system of integrated monitoring and forecasting of hazardous natural processes should be created based on GIS and remote sensing.

Promote civil society-led monitoring of disaster risk reduction

NAPS should focus on promoting civil society-led monitoring of disaster risk reduction by introducing the concepts of full participation, transparency/information sharing and feedback mechanisms, which create an environment where all stakeholders – from community to government – can air their views and inform action planning The disaster monitoring and early warning system should be reviewed with regard to hazard category, network

arrangement, monitoring and forecasting disaster events, communication of early warning to communities, training and manual requirements and community preparedness.

Considering DRR initiatives in national development planning

Integrating disaster risk reduction initiatives should be considered in national development planning and budgeting processes at national, provincial, district and village/settlement levels, and in design development.

Holistic plan for addressing DRR preparedness, prevention, mitigation, adaptation and emergency response

A holistic approach is the only approach that seems likely to provide adequate leverage on some of the more daunting issues of developing countries. The action plan should be more holistic and address preparedness, prevention, mitigation, adaptation and emergency response for DRR. The provisions of law should make government institutions more accountable to citizens.

5.2.2 Recommendations for the Forest Management related Action Plans

Use as a framework for Joint forest management and community-focused ecosystem-based adaptation

The plan should focus on the Joint Forest Management (JFM) and use it as a framework or strategy for community-focused ecosystem-based adaptation for improved livelihoods and adoption of changed policies and practices for better adaptation in the region. Joint Forest Management (JFM) should be designed and implemented with more geographical coverage and encourage local peoples' participation. Conducive environment should be created for CBOs, civil societies, private companies, local government and individuals to take part in the activities that intensify JFM in order to enhance local peoples' access to natural resources for better livelihood. With focus on Joint Forest Management, community-based reforestation, forest management, rehabilitation of threatened watersheds, agro-forestry, conservation of biodiversity and entire ecosystems, and multipurpose forest and wildlife management should be enhanced.

Aiming to economic prosperity and social stability

The integrated resources management plan through land-use planning, ecosystem management, and watershed development should be developed aiming to enhance economic prosperity and social stability of forest resources through stakeholder participation. The donor priority should focus on policy and institutional reforms and promotion of local peoples' participation in planning, decision-making, and capacity/capability building to overcome institutional weakness as well as on financial investment and environmental protection policy which facilitates people's prosperity.

Comprehensive concept and plan for forest rehabilitation and management

The GoT must develop a comprehensive concept for forest rehabilitation together with the international donor community, prioritizing reforestation/afforestation program and refinement of community forest management model e.g. JFM or Community and smallholder forestry.

Priority on policy and institutional agenda in natural resource management

The government should develop the policy and the institutional agenda including elements such as clear role for different government institutions, priority program on forestry e.g. community forestry, sustainable land use planning and management, land tenure and tenure arrangement, legislation and law enforcement, public-private sector partnerships in natural resources management.

Promote adaptive multi-purpose forestry

The GoT should introduce and promote general principle of multipurpose forestry as the guiding mechanism for future investments in forestry and actively support local communities to enhance community-based natural resources management.

Enhancement of natural resources

The plans should enhance the contribution of forests, sustainable mountain land use practices, reforestation, afforestation, agro-forestry and trees to production and incomes of resource-dependent communities and smallholders.

Developing public-private enterprise development

Without fostering entrepreneurial innovations, neither the government nor the community alone can realize the full economic potential of the natural resources. Therefore, the plans should focus on developing the private-enterprise development strategy plan and invite all interests' parties to implement the plan effectively. The new policy and strategy should promote forest entrepreneurship in socially and environmentally responsible ways.

Introducing innovative financing mechanisms for natural resource management

The national action plans should be introduced and address, together with partners, the areas of economic valuation of ecosystems and innovative financing mechanisms for natural resources management, including mechanisms such as Reducing Emissions from Deforestation and Forest Degradation (REDD+), payments for ecosystem services, Climate change and adaptation strategy, and access and benefit sharing, just to name few.

Ensuring the integrity of ecosystems and their components

It is recommended to sustainably manage land resources, preserve biodiversity both within Specially Protected Nature Areas (SPNA) and productive landscapes, extend SPNA, introduce integrated water resources management.

Introduction of a common system of monitoring natural resources and environment

The national action plans should develop a common monitoring system and create a data base for monitoring the outcomes and harmonizing and introducing common standards into the system of environment observation.

Increase forest land productivity

More of the responsibility for forest management and the production of forest crops must be transferred to the rural communities, entrepreneurs and private sector through joint forest management and other institutional arrangements in order to improve forest land productivity.

Developing and introducing a payment system for ecosystem service

It is suggested to develop justification and mechanisms to introduce payments for ecosystem services, introduce an environment tax and abolish cross subsidies.

Establishment of Community Nursery and promotion of Afforestation programme

A nation-wide afforestation program focusing on the choice of local species and technologies located close to planting sites should be established.

5.2.3 Recommendations for Sustainable Land Management related Action Plans

Focusing on Sustainable land use Planning

Sustainable land use planning (agriculture, forestry, pasture land, watershed management) and the value of other resources are pivotal components of the development agenda. Therefore, the national actions should be prepared to meet local needs and aspirations as well as to attain national goals, with wider consultation with stakeholders at national and regional levels, focusing on sustainable land use planning for use at the district and village levels. Appropriate land use planning guidelines should be developed as per ecological regions or geographical areas in consultation with land use practitioners, policy makers, planners and experts. A mechanism for planning, monitoring and following up on sustainable land use management should be established and local farming practices should be innovated through local institutions. The Government of Tajikistan (GoT) should focus on introducing and promoting Participatory land-use planning (PLUP) as a new instrument to enhance local participation in the decision-making process which ensures sustainability in ecologically sound forms of land use.

Comprehensive policy for Agriculture, Forestry, Rangeland and Watershed Rehabilitation

The GoT should urgently develop a comprehensive policy on Agriculture, Forestry, Rangeland and Watershed management in order to maintain farming practices, forest management, watershed protection and sustainable pasture management.

Recognizing tenure and user rights

The marginalized and rural communities e.g. nomadic pastoralists and indigenous people must be recognized in terms of their historic tenure and user rights while developing action plans.

Enhancement of Integrated Natural Resource Management

The resources value, biodiversity measures, ecosystem services and possible system for maintenance of ecosystem have not yet been identified and judged properly, therefore the integrated natural resources management and biodiversity in national planning and strategies formulation process should be enhanced.

Supporting alternative energy programme

NAPS should build on the institutionalization of incentives such as alternative energy (ICS, biogas), fodder and forage promotion, veterinary services, rangeland management at local level.

5.2.4 Recommendations for Environment management related Action Plans

Mainstreaming of issues of environmental security and sustainability

It is recommended to mainstream strategic environmental assessment as a compulsory procedure in developing and implementing country development programmes and plans, to promote cross-cutting environmental security and sustainability in sectoral and regional development programmes, and to consider natural resources sustainable management issues at local level within local socio-economic development plans.

Identifying the regional and emerging strategies issues through Policy dialogue

High level political dialogue between scientists, decision makers and stakeholders should be facilitated by targeting high-level events for focused discussion for policy makers, identifying emerging strategic issues (e.g. Himalayan University Consortium, trans-boundary landscapes, River basins, Mountain Environment Regional Information System, Climate change and adaptation)**.**

Upgrading the environmental monitoring systems

The action plans should strengthen the institutional potential with a view on an environmental sustainability promotion through improved environment legislation, ensuring the efficient use of government funds and foreign aid for the highest priority conservation projects and upgrading the environmental monitoring systems.

Increasing ownership of the programme

There should be a sufficient raise of incentives to enable an environment for stakeholders' participation and foster the feeling of ownership of the programme. Establishment of ownership of environmental program with negotiated rights should be promoted to effectively manage natural resources and ensure equitable access and benefit sharing of local people.

Private sector involvement in the sustainable management of natural resources

It is recommended to develop and implement fiscal and market incentives for the private sector to sustainably manage natural resources, introduce and disseminate best practices of sustainable natural resources use by the private sector; and build capacity for partnerships between government and the private sector on a mutually beneficial basis.

Assessment of resources and mechanisms for extracting of natural resources

It is recommended to reliably assess the volumes of renewable and non-renewable natural resources and the ecological capacity of the areas The system of limiting natural resources management, which at present is based on a permit system (licensing), lacks reliable data on limiting the extraction of particular natural resources and needs to be enhanced.

Establishing catchment conservation areas

Establishment of catchment conservation areas is recommended. Land productivity within such catchment conservation areas should be improved through construction of water reservoirs and irrigation facilities and the establishment of nurseries and tree plantations.

Promote multiple-partnership approach

Multiple partnerships approach, with a diverse set of strategies to achieve the regional and national goals to tackle the environmental issues is recommended.

5.2.5 Recommendations for the Livelihood Promotions related Action Plans

Combining pro-poor policy framework with improving good governance and institutional arrangements

The pro-poor policy framework combined with improving good governance and institutional arrangements at all decision making and political levels in order to address the social structures and social transformation processes should be enhanced. The action plans should promote stronger local land and resource rights for local users, improved local participation in decision-making and leadership, increased transparency and responsibilities of local resources management institutions and stronger functional linkages among stakeholder groups.

Strengthening livelihood and natural resource management strategies

The national action plans should strengthen livelihood and natural resources management strategies by mitigating the effects of natural hazards, improving disaster preparedness and response, creating public awareness programme for disaster reduction and decreasing the vulnerability of people's livelihoods to recurrent shocks and natural disaster.

Generating the livelihood options

The people living in the mountains have limited livelihood options owing to the difficult access and absence of market centers. Therefore, the livelihood options and opportunities to minimize the pressure on mountain ecosystem, natural resources, and environment should be generated.

Developing Gender Equity and Social Inclusion (GESI) Guidelines

The action plans should be developed taking into account the GESI perspective and they should create an enabling environment for being accountable to all relevant stakeholders.

Mechanisms for the implementation of gender policies

Effective mechanisms for the implementation of gender policies should be created as part of public administration reform.

Participatory assessment of poverty and livelihood issues

The capacity of project partners to assess and analyse poverty and livelihood issues should be improved in a participatory manner as a mechanism for effective project planning and implementation

5.2.6 Recommendation for the Co-operation, co-ordination and other cross-cutting issues related Action Plans

Develop vision and attempt to establish Central Asia regional co-operation

Regional Cooperation should be encouraged to include "sustainable development through livelihood promotion and natural resource management" as one of its core principal objectives. A vision and policy guidelines should be developed and the forms of regional co-operation and comparative study of other countries' experiences, for the members countries' consideration should be identified. There should be an attempt to establish Central Asia regional co-operation.

- egional Cooperation should be encouraged to include "sustainable development through livelihood promotion and natural resource management" as one of its core

principal objectives and policy guidelines for the members countries' consideration should be developed.

- The regional co-operation must be encouraged and promoted among Central Asian countries, to exchange programs related to research, education, training and extension in the fields of livelihood and natural resources conservation and management;
- The private sector and business partners in the Central Asia should be encouraged to adopt policies to ensure only legal provisions and follow the rule of law in any kind of supply chain: timber and non-timber productions.
- High level political dialogue between scientists, decision makers and stakeholders should be facilitated by targeting high-level events for focused discussion for policy makers, identifying emerging strategic issues (e.g. Himalayan University Consortium, trans-boundary landscapes, River basins, Mountain Environment Regional Information System, Climate change and adaptation)**.**
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Understanding on cross-sector and inter-cooperation policies issues

The understanding of strategic and cross-sector and inter-cooperation policy issues should be improved based on existing scientific knowledge and expertise. The essential strategy is to adopt national mainstreaming and harmony through inter-agency coordination and meaningful partnership and co-ordination for implementable actions.

Enhancing science-policy dialogue

The national action plans should be enhanced by the science-policy dialogue across all stages of the policy process for designing, formulating, monitoring and evaluating livelihood, forest, land use and DRR-related policies, programmes, instruments and strategies as well as governance development. A periodic policy dialogue should be conducted in order to update the policies for ensuring smooth and effective implementation of sustainable natural resources and livelihood strategies and reviewed at central, regional and district levels.

Strengthening regional co-operation and cross boarder initiatives

The strengthening of regional co-operation and cross boarder initiatives should focus on identifying the regional agenda and enhancing trans-boundary co-operation, inter-governmental agency co-ordination, resource management, common resource utilization, social and cultural development.

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ANNEX

Annex 1: Lists of experts and officials participated in face-to-face meeting in Tajikistan

SN	Date	Name/Designation	Organization	Objectives	Remarks
			Travel to Dushanbe from Vienna, 20 Nov, 2011		
1	21-Nov-11	Gulnaz Jalilova, International Project Coordinator	Hilfswerk, Austria	discussed the visit, possible on-line access of policy documents, country specific documents, details plans for developing National Action plans (NAPs)	
2	21-Nov-11	Umed Aslanov, Assistant to Coordinator	Hilfswerk, Tajikistan	Described the on-going project including PAMIR, possible steps for facilitating the development of NAPs	GJ
	22-25 Nov, 2011	Study on developing a proposal of research methodology for developing NAPs and presentation for the up-coming meeting			GJ and UA
3	26-27 Nov	Ejaz Karim, Country Team Leader, Afghanistan,	NGO FOCUS Afghanistan	presentation of proposed methodology and discussion about the road map and plan to meet possible respondents and organizations	GJ, UA
4		Rukhshona Broimshoeva, Country Team Leader Tajikistan	NGO FOCUS Tajikistan, Dushanbe		
5		Ikramuddin Bahram,Country Team Leader, Afghanistan,	NGO FOCUS Afghanistan		
6		Tolkun Jukusheva, Country Research Team Leader	MSDSP-KG, Bishkek, Kyrgyzstan		
7	28-Nov-11	Firoz Verjee, Dsc., Co-ordinator, DRMI	Aga Khan Development Network, Dushanbe	Discussed the PAMIR project and feedback on Delphi survey for Developing NAPs	GJ and Tolkun
8		Nashir Karmali, Executive Officer	Focus Humanitarian Assistance-AGN, Dushanbe	Discussed the PAMIR project and feedback on Delphi survey for Developing NAPs	GJ, RB and Tolkun
9	29-Nov-11	Ursula Fahringer, Ambassador Extraordinary and Plenipotentiary	Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan	Shared information about PAMIR project and on-going activities along Delphi survey	GJ, UA
10	30-Nov-11	Svetlana Jumaeva, Executive director	Center for Climate change and disaster reduction, Dushanbe	Shared information about Delphi concept and possible documents for review and respondents	GJ
11	30-Nov-11	Salimov Talbak, Chairman	Committee on Environmental protection under the Government of the republic of Tajikistan	presentation of proposed methodology for NAPs, request for forming steering committee and study team members and possible assistance for the further process	GJ and MM
12		Nazarov Azizbek, Head of International Relations Sector	Committee on Environmental protection under the Government of the republic of Tajikistan		
13	13-Dec-11	Ergashev Murod	Project manager, PALM	Shared information about Delphi concept and possible documents for review and respondents	GJ

Note: GJ: Gulnaz Jalilova**, UA=** Umed Aslanov**, RB** = Rukshona Broimshoeva **and** MM= Muazzanne Marufi