



drynet

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A global initiative giving future to drylands

Drynet is a project of 14 organizations from all over the world. They work together to combat land degradation

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Drynet Update

Pakistan's more than two-third population is living in rural areas where the dependence on natural resources is foremost. Water availability is the major driving force of rural economy. Dry areas of Pakistan are characterized by rangelands and scattered patches of rainfed agriculture. These areas comprise 53% of the country and fall in southern parts of NWFP and Punjab, Sind, Balochistan and parts of Northern Areas. Balochistan is the driest Province where water shortage has limited the options for land based livelihoods to a bare minimum. Generally, natural resource development, especially in dry regions, gets little attention by the policy makers and local leaders. Due to low productive potential, they get limited resources for development. Livestock rearing and grazing in dry ranges has been the main source of food and income. Similarly, rainfed agriculture which builds on traditional means of water management practices can play a vital role in reviving the rural economy if supported and improved on scientific grounds.

A number of research institutions are engaged in these areas aiming at

technologies are at times complex, expensive and/or these are developed under the controlled conditions or outside the application area, resulting in little acceptance from the farmers addressing Millennium Development Goals which include ambitious objectives on eradicating poverty from the World. Given the fact that poverty is the most predominant factor in dry zones due to scarce resource base, it is the need of the day that drylands are given focused attention not only from ecological perspective but also because people living in these areas deserve more attention and support.

What Costs More: Preventing Disaster or Rebuilding:

Natural disasters pose a growing threat to the development strategies of the country by destroying infrastructure and productive capacity, interrupting economic activity, and creating irreversible changes in the natural resource base. With increasing frequency, the country is facing situations in which scarce resources that were earmarked for development projects have to be diverted to relief and reconstruction following disasters, thus setting back economic growth.

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exchange earnings capacity of the country, at a time when extra resources are needed to finance imports of food, energy, and inputs for the agricultural and manufacturing sectors. If sustainable development is to be achieved in the country, we will have to take effective measures to reduce their vulnerability to natural disasters.

Disasters also lead to loss of precious human lives where its impact on vulnerable members of the society is obvious. During disasters, it is women and the children who tend to suffer the most both in the immediate disaster as well as aftermath. According to a source, 85 percent of persons displaced by the recent floods were women and children. The dislocation caused by the flood could be particularly upsetting for women in Pakistan's traditionally conservative rural areas. As the floodwaters rise, women are at acute risk from starvation, exposure, sexual assault, and water-borne diseases. However, providing them with assistance is more difficult than these basic facts suggest. Reports points out that in traditional Pakistani society, it is taboo for women to receive aid or medical care from male relief workers, preventing many of them from seeking such aid in the first place. This particularly applies to pregnant women entrapped by the flood.

Recent devastating floods in Pakistan may foreshadow extreme weather to come as a result of global warming. The effect of global warming is changing weather patterns and is causing weather-related disasters

What causes Climate Change? Climate changes result from both natural and anthropogenic factors. Terrestrial and extraterrestrial factors contribute to climate change. Extensive deforestation of large surface areas of the earth has resulted in significant changes in the water and radiation balance of the planet. Other apparent adverse anthropogenic impacts on climate include land-originating pollution due to increases in urbanization and industrialization; increases in the use of fossil fuels; and extensive use of agrochemicals.

Human losses and destruction caused by disasters are avoidable tragedies and their impact can be limited through comprehensive Disaster Risk Reduction (DRR) measures across all sectors. DRR is a systematic approach to identifying, assessing and reducing the risks of disaster. It aims to reduce socio-economic vulnerabilities to disaster as well as dealing with the environmental and other hazards that trigger them. DRR is very wide-ranging and its scope is much broader and deeper than conventional emergency management. There is potential for DRR initiatives in just about every sector of development and humanitarian work.

Investing in DRR not only minimizes losses but also supports the achievement of Millennium Development Goals. For example, DRR promotes health and education by protecting public infrastructure such as schools and hospitals, poverty reduction by protecting economic activities and assets, and gender equality by empowering women to play an active role in risk reduction initiatives. Recovery from disaster provides the opportunity to rebuild better and avoid repetition of

mitigate the adverse effects of natural climate change factors BUT much can be done to control the additional stress through climate change adaptation and reducing the risks through some policy and physical measures. A number of practical flood combating strategies can be proposed which obviously relate to saving the environment and contributing in household level food security. For instance:

Climate Adaptation: This means the capacity and potential for humans to adapt to the Climate Change. Examples of adaptation include defending against floods through better flood defences, and changing patterns of land use like avoiding more vulnerable areas for housing. Adaptation to global warming and climate change is a response to climate change that seeks to reduce the vulnerability of natural and human systems to climate change effects. Climate change adaptation is especially important in Pakistan since our country is among those ones who are predicted to bear the brunt of the effects of climate change.

Mainstreaming Disaster Risk Management at Provincial level: Mainstreaming Disaster Risk Management into Development Policy, Planning, and Implementation is very crucial. Mainstreaming disaster risk management into development practice requires all institutions at all levels and from all sectors to clarify and play their roles and responsibilities. Mainstreaming should result in better anticipation of short- and long-term impacts and help people prepare for events that require trained personnel and safe, resilient 'lifeline infrastructure' for

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risk. Government, financial, national and local implementing agencies must factor into their programs the measures needed to reduce disaster risks.

Strengthening Community-based Approaches to Disaster Risk Management:

Preventive measures for reducing disaster risk are very effective when they are set off through participation at all levels, from the local community through the provincial government to the national, regional and international level. Community-based Disaster Risk Management (CDRM) emerged as an alternative during the last two decades. Over time, it has become apparent that top-down approaches fail to address the needs of vulnerable communities, often ignoring local capacities and resources. A top-down approach can increase vulnerability and undermine project improvements in quality of life, security and resilience. The CDRM approach emphasizes the active involvement of communities in all phases of disaster risk management. The aim is to reduce vulnerabilities and to increase the capacities of vulnerable groups to prevent or minimize loss and damage to life, property, livelihoods and the environment, and to minimize human suffering and hasten recovery.

Strengthening Role and Response of Stakeholders during Disaster:

Everyone, including common citizens, has a responsibility to understand the effects of a natural hazard and

management and planning is education. Not everyone can be expected to completely understand everything about a potential natural disaster. Therefore, one of the most important links between all involved is effective communication between various groups of people. The key stakeholders who need to play their coherent role and response are Scientists and Engineers; Public Officials; and the Citizens.

Strengthening Role of Women: Lastly, for sustained risk mitigation, it is strongly recommended that an active role of women must be ensured by empowering women to play their active role in DRR initiatives.

Following points suggest usefulness of role of women in DRR and possible

- Land rights allow women to increase agricultural production, thus reducing vulnerability of women headed households to disaster risk.
- Equal access to property rights allows women, as primary users, to manage natural resources in a sustainable manner.
- Political representation allows women to ensure that access to water is a priority in local decision making.
- Improved women's participation in decision-making processes and productive activities should specifically include awareness on disaster risks, preparedness and preventive measures that reinforce traditional coping measures undertaken by women and increase disaster resilience of communities.

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Key problems and constraints in dryland management: Dryland management faces various constraints and problems hindering its improvement. Some key issues are briefly outlined.

1. Non-integrated approaches at implementation level:

Past interventions to improve dryland management often focused on a few aspects in an isolated manner without applying integrated approaches. One example is the conventional scheme of rangeland management and afforestation which excludes livestock. Since most drylands are/were grazed rangelands, it is crucial to consider livestock in dryland management. Another example is that of addressing the problem of water scarcity in dry areas without an integrated water management approach at different levels.

2. Eroding traditional organizations and management systems:

In southern NWFP a century old Rudh Kohi (mountain flood irrigation) system exists while the traditional institutions (e.g., Pathi dari) responsible for the water distribution are eroding. The factors behind the phenomena are as follows:

- * Land fragmentation, which leads to many owners.
- * Mechanization of farm operations (previously the farmers used bollocks for construction of bunds/ sods and now use bulldozers/ tractors. Thus

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water availability).

* Political influence added to the weakening of the traditional system. Further, the traditional system of irrigation is based on Saroba-Payana principles (upstream-downstream) where the upstream communities have rightsto irrigate their lands first and then let it to the downstream communities.

Due to drought during the last few years the traditional system has nearly eliminated since the downstream communities hardly receive any water.

Land tenure & rights:

The existing systems of tenancy prevailing in different parts of the country discourage the tenants from tree plantation and range improvement activities as they have no rights and security to use the produce on a longer term basis.

This situation has further added to the deterioration of traditional water distribution system and land degradation especially at the downstream. Thus a strong need arises to improve the relationship between owners tenants and also create win-win situation for downstream-upstream farming communities that would help in strengthening the system.

Overexploitation and degradation affect the livelihoods of the poor

Growing rural communities immediate needs force them for maximum utilization of available resources. The increase in livestock

erosion and loss of productivity. Degraded rangelands are difficult to rehabilitate. Consequently, the resource base for livestock is diminishing, leading to low livestock production. Similarly, crop yields have diminished due to prolonged droughts and non-sustainable cropping practices causing erosion and loss of soil fertility.

Overexploitation of wood resources by local communities for use as fuel wood, fodder and timber but also by outsiders for timber trade has further led to degradation and loss of biodiversity of the natural resource base. The situation is leading towards the risk of food security⁴ because productive potential of land is weakening. Rural women are particularly at risk from the effects of land degradation. Their livelihoods and responsibilities make them more dependent on the local natural resources than men. The constraints and pressures which they face leave them more vulnerable to declining crop yields, fuel wood shortages and deteriorating water supplies.

Lack of water for different purposes:

The lack of availability of sufficient water at the right time is the most limiting factor for agricultural and livestock production and income generation. Most rural communities do not even have access to sufficient and safe drinking water. Often the shortage of water is not only caused by insufficient rainfall but also by the lack of capacity in sustainable management and equitable distribution of the available water. The rural poor especially lack access to sufficient water for drinking and production purposes.

the adoption of new technologies. Causes for low adoption include the lack of community participation in technology development, dissemination of inappropriate and expensive technologies and the indiscriminate use of direct incentives, leading to abandonment of the promoted technologies after termination of certain project based intervention.

Poverty trap as a cause and effect of dryland degradation:

An important feature of the critical condition in the drylands is poverty. The linkages between degradation, poverty and livelihoods have become a major concern of development agencies and policy makers. Poor farmers have limited access to inputs and therefore, rely on the inherent productivity of their land and water resources for their livelihood security. Widespread poverty that arises from degradation or loss of natural capital lead to "ecological poverty" or in the case of pressure to migrate, to "environmental refugees". The so called "poverty trap" indicates that poverty and degradation reinforce each other; the poor are both causal agents and victims. Power abuse, institutional and market failures are often thought to be important driving forces behind breeding poverty and the degradation process. Unless these issues are addressed adequately on a policy level, strategies to "repair" the environment in order to alleviate poverty will not succeed. Thus an

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