

Book Review ***Pokhari ra Pahiro*** **Madhukar Upadhya**

Sanu Maiya Shrestha¹

The book '*Pokhari ra Pahiro*' (Ponds and Landslides in Nepali) by Madhukar Upadhya with two decades of experience in watershed management in the midhills of Nepal was published by Nepal Water Conservation Foundation with the support of ICIMOD. The author presents ways of managing natural resources by reviving the lost wisdom of the traditional system of water management in the hills in order to ensure food security and adopt the problems of the extreme events caused by emerging climate change.

The volume provides information about how traditional dug out ponds help to check land degradation and ensure food security by reducing flood, landslide, gully formation, and nutrient loss through water-centric resource management in an agrarian and mountainous country like Nepal with detailed accounts of water culture, food system, and political economy of soil conservation in the hills in a simple vernacular for the general readers.

It has eight chapters. Chapter 1 describes the conditions of mountain villages located in diverse geographical settings while chapter 2 talks about farmers' life in the villages in between runoff, floods, and drought.

Chapter 3 describes the endless struggle of farmers to save the land from degradation and repair the damages inflicted by monsoon and runoff to maintain their wage land productivity. The next chapter dwells on the political economy of soil erosion and how state machinery and avoid the urban resources to repair and rebuild damaged roads and bridges and how such damage affects the life and economy of cities whereas the villages remain unattended. The three chapters that follow elaborate the traditional techniques of rainwater management, benefits of using ponds for water management and challenges faced in promoting ponds respectively. Chapter 8 reviews the development paradigm in use to improve the living conditions of people and explains why various models and development efforts in the hills have largely failed to bring the required change. Against this backdrop, the author reflects on his experience of using ponds for water management and explains the benefits of this traditional method which he claims is not only sustainable but easily implementable by farmers irrespective of their economic status. In the annex, the book presents key information about Himalayan landscape, river system, changing food systems, and climate change.

¹ Department of Irrigation.

In sum, the book covers entire aspects of the impacts of gullies, landslides, and soil erosion on agriculture in the midhills of Nepal. Ponds help to maintain the water tower of hills and subsequently prolong the discharge in the springs by holding the monsoon runoff, which would otherwise flow unrestricted causing erosion along its channel.

The author argues with sufficient evidence that this simple and low cost technique of water management is easy to implement to bolster food security in the hills. At a time when all water management experts are focused on management of water in the streams, rivers, and lakes, this book draws attention to the benefits of managing **green water**, i.e. the water in the soil which helps to protect vegetation including farm crops and explains various dimensions of managing green water to improve the living condition of the poor and sustainably manage natural resources.

Managing water resource requires managing both blue and green water as well as addressing problems of wet and dry seasons together in an integrated way. The policy that focuses on management of blue water only does not help to maintain the balance between land, water, and vegetation which depends on green water. Water stays at the center of the linkages between land, water, and vegetation. The current policy of managing blue water has not recognized the role of green water in maintaining blue water flow.

The author also focuses on the limitation of managing different kinds of resources. Forest-centric resource management looks after protection and productivity of vegetation only. Land-centric management is limited to farmland. But water-centric resource management helps to maintain the balance between land, water, and vegetation by primarily addressing the problem of the skewed distribution of rain water which is amply available during the monsoon and also in the winter. Once the balance is maintained, it can help in improving the living conditions of farmers.

Water-centric resource management begins with management of land, because without proper land management, water cannot be managed. It must begin from the ridge of the mountains where the runoff volume is manageable. Managed runoff reduces chances of gully formation and landslides and, eventually, flooding in the low lands. This is the traditional way of managing water in the hills.

Water demand will keep on increasing as population grows. Climate change will add further challenges to water management. Unless we begin to harvest as much rainwater as possible in the monsoon, it will be difficult to maintain the water demands during the dry season. We cannot also ignore the rising costs of repair and maintenance of infrastructures damaged by floods and

landslides. The nation spends billions of rupees in their repair and maintenance. The simple technique of runoff management uses ponds that would solve many of these problems at a low cost.

The book attempts to bring to the fore the fact that environmental problems associated with agriculture and food security as well as the emerging challenge of the impact of climate change can be minimized with water-centric resource management. For this purpose, work must begin by conserving the farmlands in the hills. The book is helpful to students, researchers, organizations as well as policymakers interested in understanding the issues of land - water relationship in the midhills of Nepal and other striving to improve the living condition of the people in the hills. But the outreach of the book needs to be expanded by translating it into english.
