



PES for Yak Production system in Bhutan

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Background

- Bhutan is a small landlocked country in the eastern Himalayas surrounded by China and India
- Bhutan is divided into 20 Dzongkhags (Districts) covering an area of 38,394 km²
- Total population = 634,982 (NSB, 2005)
- Elevations ranges from 150-8000 m asl (south-North)

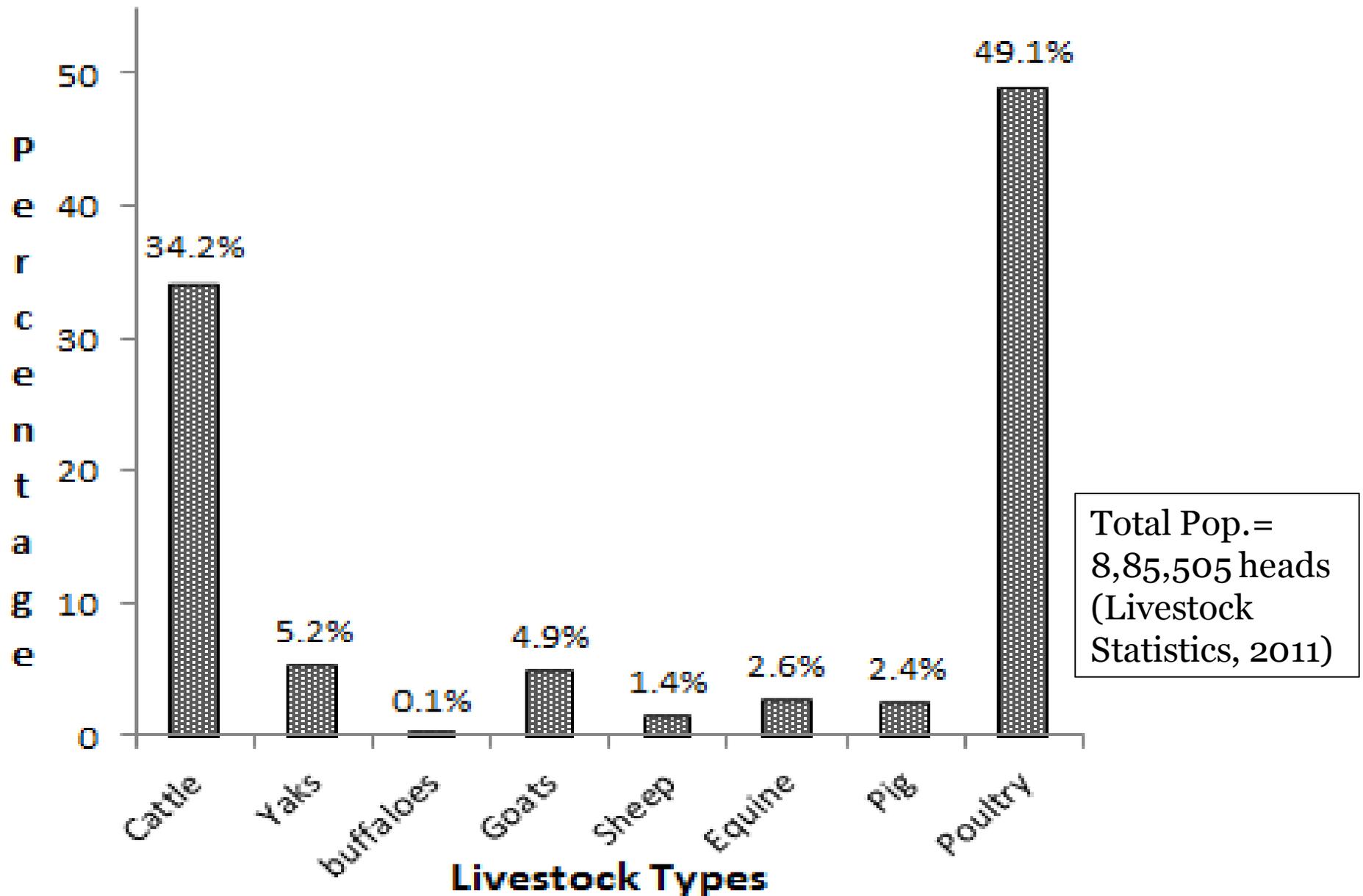


Figure1: Bhutan Map

Economy and Livestock

- Bhutan's economy - agrarian based - Almost 90% of the farmers' rear livestock for their livelihood- contributing 4.3% of the country's GDP (NSB, 2011)
- Bhutan has comparative advantage in rearing livestock over agriculture production since only about 3% of its land is suitable for arable agriculture (PPD & NSSC, 2011)
- Therefore, livestock rearing plays a pivotal role in the subsistence and integrated Bhutanese farming system
- Nevertheless, Bhutan has a strong deficit in livestock products, mainly with regard to beef, pork and fisheries.
- Besides food and fiber, livestock also provides draught power and manure which are essential for sustainable agriculture in mountainous terrain

Livestock Population



Ruminant livestock Production System

Three types of production systems

1. Transhumant Yak system

✓ Confined to high altitude areas



2. Migratory Cattle system

✓ Temperate and subtropical areas



3. Sedentary Cattle rearing system

✓ Semi-urban & rural areas

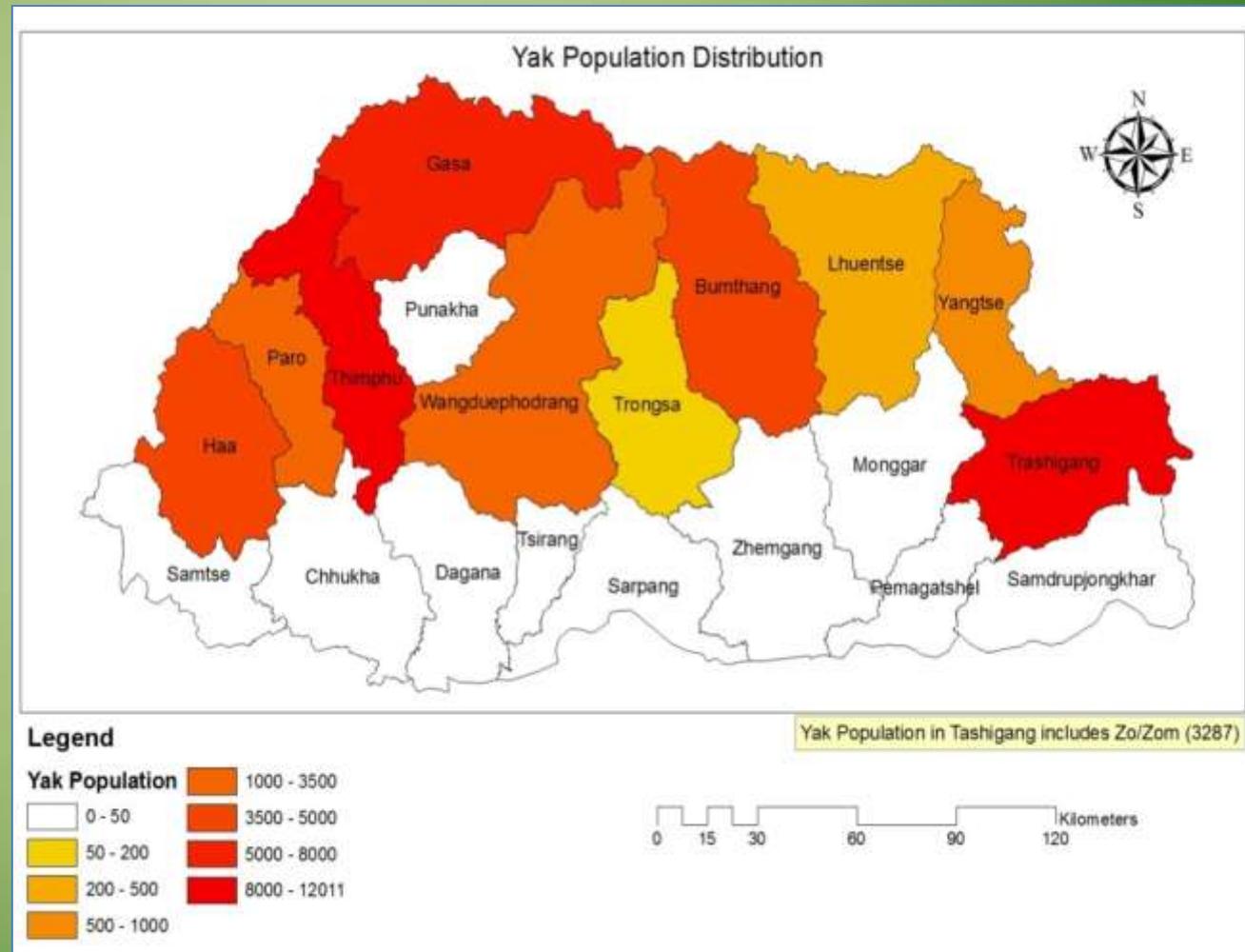


Yak Herding in Bhutan

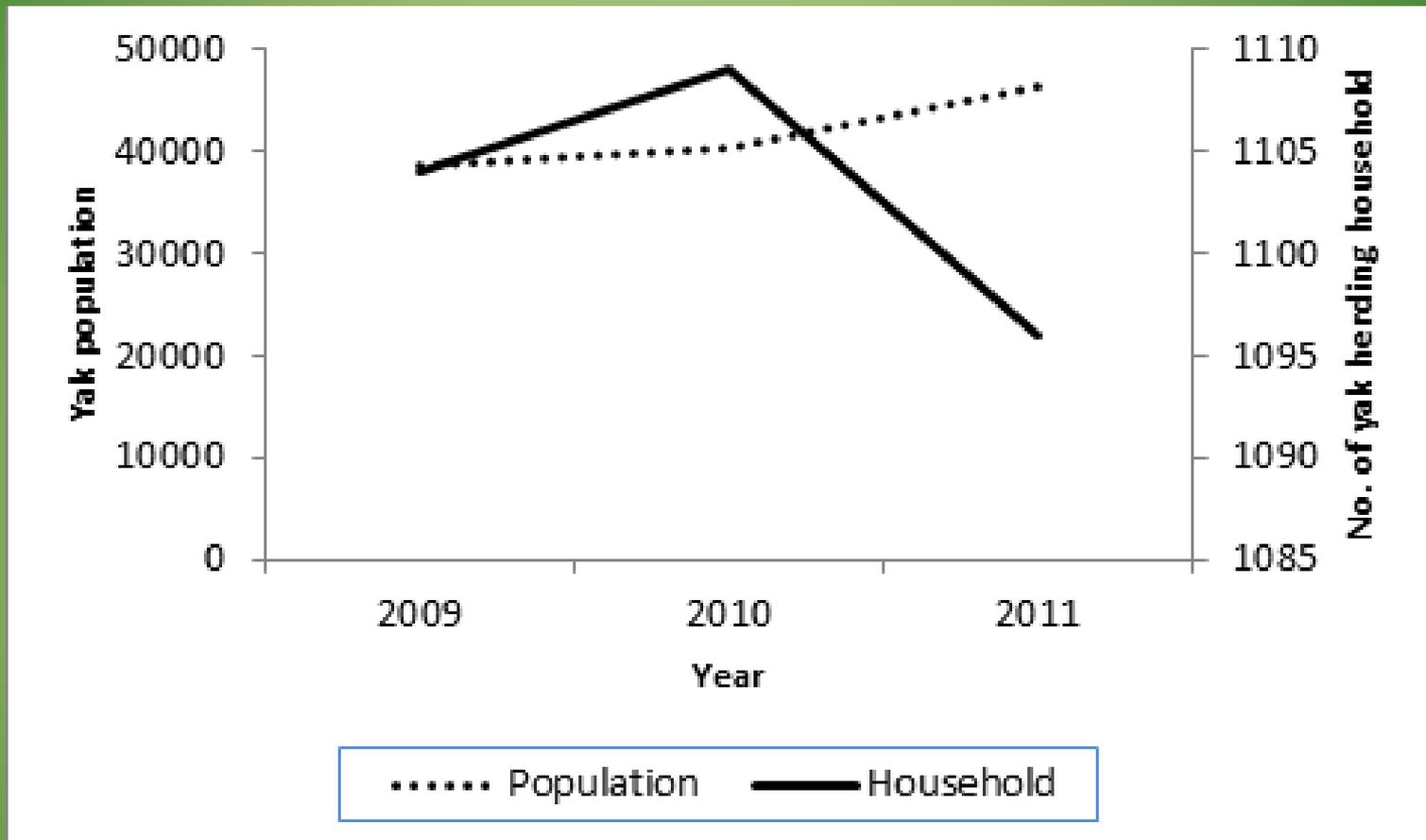
➤ Yaks reared in 10 out of 20 districts in northern belt of the country

➤ Main source of income

➤ Yak farming integrated to farming which provides draught energy & manure



Trends of Yak Herding in Bhutan



- Yak population is increasing steadily but herding households are rapidly decreasing.

Constraints in Yak Herding

- Harsh climatic conditions in the high altitude areas
- Lack of basic amenities and access to market
- Predation of the yaks by wildlife
- Competition of limited grazing resources with cattle and horses in yak's winter pasture
- Encroachment of the grazing areas by unpalatable shrub species

Allocation of grazing area and range management are major constraints

Goods & Services offered by Yak rearing

➤ Besides traditional & marketed outputs, other services include;

1. Landscape & biodiversity conservation

- Prevent bush encroachment, maintain species diversity through grazing and trampling
- Provide habitat for endangered flora & fauna (eg. *Cordeceps*)



Goods & Services offered by Yak rearing

2. Water Resource preservation

- Managed grazing prevents erosion & increases water infiltration
- High altitude meadows are source of important water heads for principal river systems



Goods & Services offered by Yak rearing

3. Preservation of Cultural heritages

- Yak herding communities have unique culture. Risk of being forgotten !



Herders in western Bhutan (Laya)



Herders in Eastern Bhutan (Sakten)

Goods & Services offered by Yak rearing

4. Presence in remote areas

- Only Yak herding is possible in harsh environments.
- Herders presence supplements national security & stability



Prospects for yak herding

1. Huge Deficit in animal food products at national level. With inadequate land & feed availability for mono-gastric production, grass based ruminant production will play an crucial role to achieve the self sufficiency
2. High altitude landscapes, pristine environment & communities are key touristic features. Well organized tourism offers an opportunity to enhance the national income from this sector.
3. Hydropower sector is rapidly developing and its sustainability highly depends on the management of highlands for the preservation of water towers and the control of erosion.

PES in Bhutan

- Agriculture's role in the provision of ecosystem services depends critically on the incentives available to farmers.
- Such incentives currently tend to favor the provision of conventional outputs such as food and fiber over that of environmental services that are generally produced jointly with them.
- The concept behind payments for environmental services is straightforward because;
 - ✓ producers of environmental services are not usually compensated for providing them, but they tend to be undersupplied or are not supplied at all.

Legislations on PES in Bhutan

Major Policies for enabling PES in Bhutan

1. The Water Act of Bhutan 2011
 2. Sustainable Hydropower Development Policy
 3. National Forest Policy 2010 also includes similar instruments to enable PES
 4. Further, Tourism Policy of Bhutan 2009, offers provisions of incentives for maintenance of landscapes & participation of communities in tourism development
- Specific provisions for enabling PES

However, none of the above legislations directly addresses the compensation for Yak production in highlands

Rationale of PES for Yak Herding Communities

- Despite the yak herding communities producing/acting as custodians of environment services, and constraints to yak herding, these communities are deprived of benefits
- Government already supports yak herding communities but not directly related to the delivery of environmental services
- Formal collaborative arrangement on PES needs to be pursued with tourism and hydro-power sectors
- PES scheme for yak herders was identified during preparatory phase of the National Livestock Development Policy

PES for Yak herding Communities

Goal

“The livelihoods of yak herders secured and improved by enhancing production through provisions of developmental stimulus and increased compensation for environmental services they provide”

Objective

“Develop a National level PES scheme for yak herding communities and its demonstration in a context of a pilot project”

PES for Yak herding Communities

Proposed Activities

1. Develop a national level PES scheme addressing yak herders
 - Develop framework for PES scheme (technical, financial and institutional)
 - Consultation at national & local levels
 - Capacity building at national & local levels

PES for Yak herding Communities

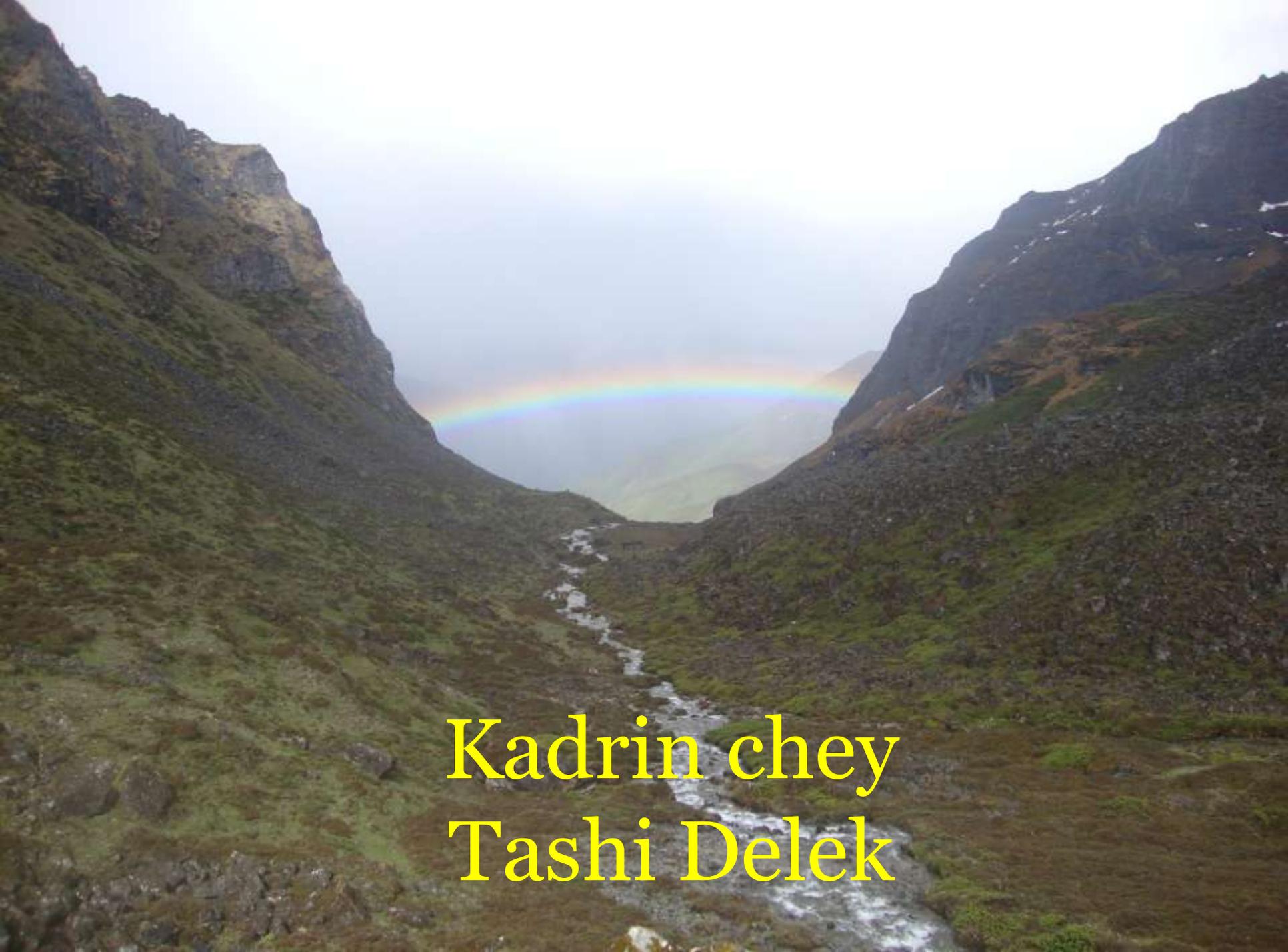
Proposed Activities Cont'd....

2. Develop and Implement a Pilot Project on PES

- Identify services and related actions for PES
- Valuation of environment services
- Develop PES institutional setup & capacity building of herders
- Facilitate negotiation between buyers and providers

The Way forward

1. Formulation mission in spring 2013 involving national counterparts, FAO experts, and consultants
2. Field visits to potential sites and site selection for pilot project
3. Linking PES for Yak production with national policies and other PES schemes (watershed management)

A wide-angle photograph of a mountain valley. The foreground shows a rocky, grassy slope leading down to a small stream. In the distance, a vibrant rainbow arches across the valley floor. The sky is overcast and grey. The text 'Kadrin chey Tashi Delek' is overlaid in yellow at the bottom center.

Kadrin chey
Tashi Delek