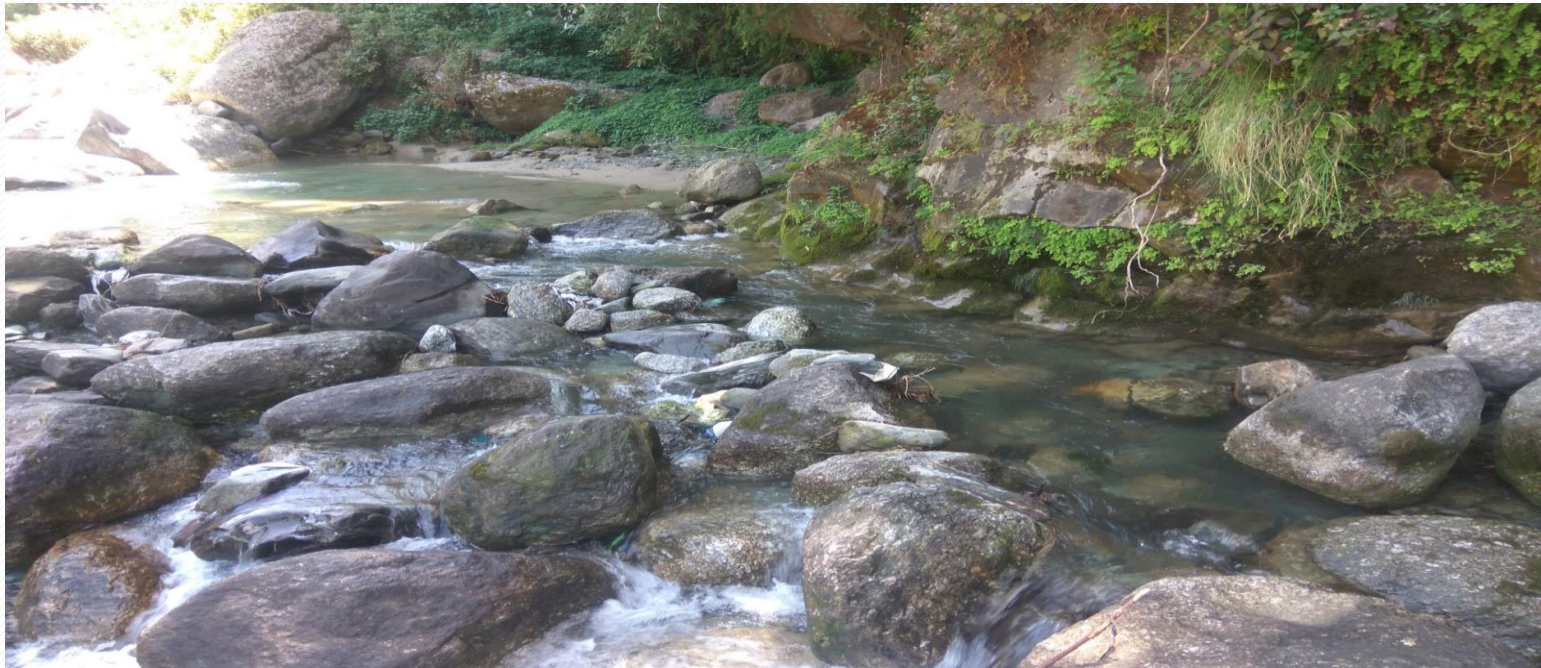


Traditional Institutions in Contemporary Context: A Study of Community Managed Irrigation System (Kuhls) in Himachal Pradesh India



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Context

- In South Asian context the governance of common pool natural resources - an issue of increasing concern.
- Existence of numerous community managed institutions around resources - water, forests, pastures, and fisheries .
- Confronted with diverse challenges over a period of time- modernity, state, market and capital.

Objectives

- Analyse the status of Kuhls- community managed irrigation systems in recent times including its current usage.
- Identify factors that have impacted community participation/social capital.
- Understand the role of state and the market in this context.

Research Questions

- In what ways changing socio- ecological context have impacted the management of Kuhls.
- What has been the role of the state?
- What is the perception of different stake holders regarding institutional governance?
- How market forces have impacted these irrigation channels?
- What is the role of gender in running of this institution?

Methodology

- Based on Mixed Method Approach- Qualitative dominant.
- Data Sources: Archival- dist. Gazetteer, field generated data- empirical + oral narratives(ethnographic).
- Field Site – Kangra district of Himachal Pradesh.

HIMACHAL PRDESH 2001



Field Study- Saperu and Nanhar Gram Panchayat

- Revenue Villages under Saperu- Gehar, Gorat, Rachiyara and Saperu.
- Revenue Villages under Nanhar- Bari Khas, Gont, Kapain and Nanhar.
- Kuhl: Chandruhl covers both the panchayats.
- Total area covered by the kuhl: 776.98 hectares in 21 panchayats.

Village Profile: Saperu and Nanhar Panchayat

Revenue Villages	General	Scheduled Castes	Scheduled Tribes	Other Backward Classes	Total Population
Gehar	68	NA	275	NA	343
Gorat	42	NA	62	NA	104
Rachiyara	168	122	301	NA	591
Saperu	38	39	322	NA	399
Total	316	161	960	-	1437

Revenue Villages	General	Scheduled Castes	Scheduled Tribes	Other Backward Classes	Total Population
Kapain	NA	NA	20	NA	20
Gont	127	22	205	NA	354
Nanhar	438	186	367	37	1028
Bari Khas	228	78	389	NA	695
Total	793	286	981	37	2097

Household Saperu Panchayat	Household Nanhar Panchayat
330	540

Kuhl Structure

- This is a traditional irrigation system - Kangra, Mandi, Hamirpur.
- Built on the principle of natural gravity flow and found in precipitous areas.
- These channels carry water from melting glaciers and rainwater running of the slopes above them.
- A *danga* (Large wall of stones) diverts the flow of the natural stream(khuds) to the channel taken along the natural gravity path to distribute to the landowners downstream.

- Canals (kuhls) vary from 1 to 15 kms.

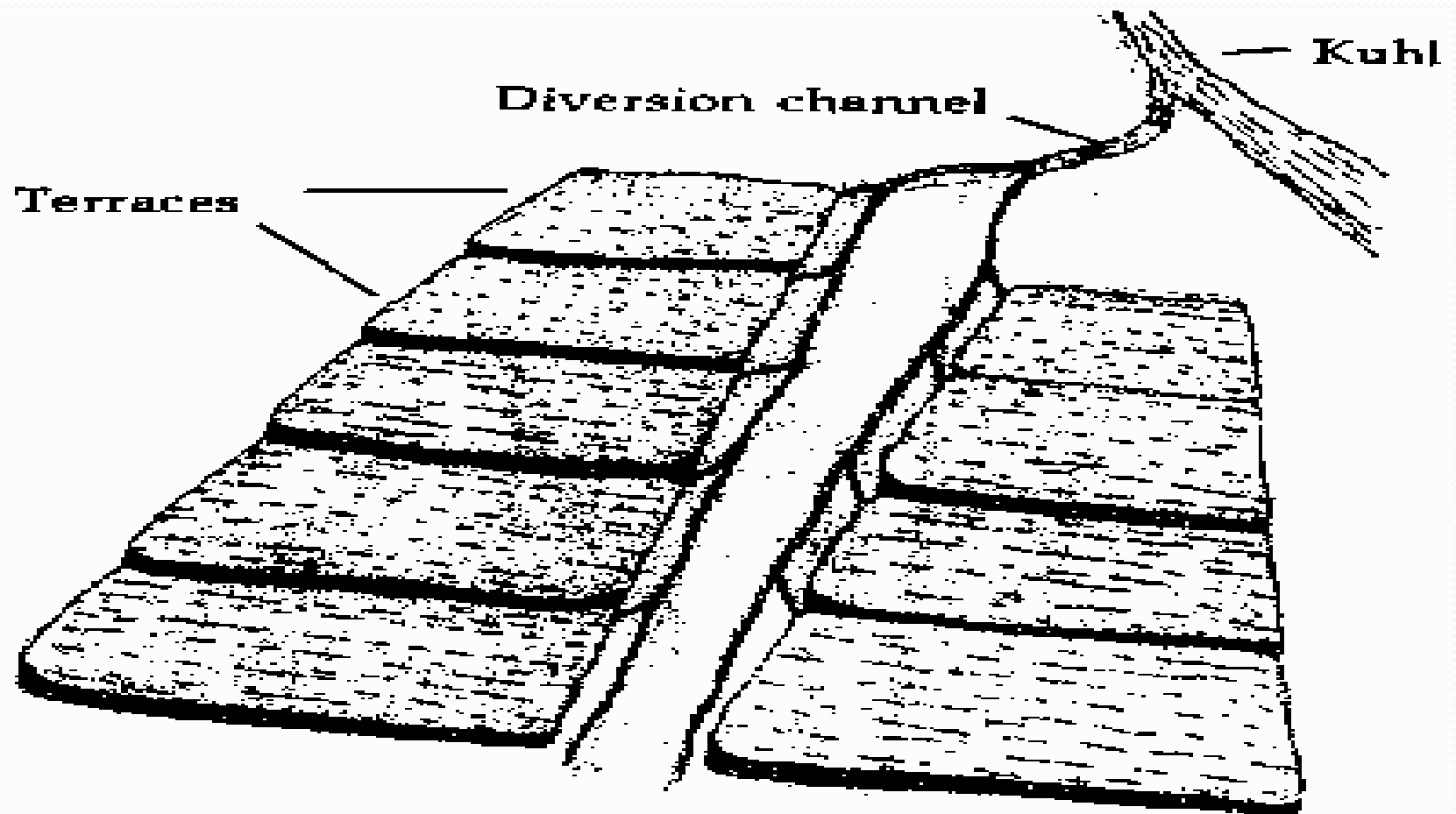
- Kuhl irrigation network of Kangra comprises approximately 715 large kuhls and around 2500 small kuhls and irrigate more than 30,000 hectares in the valley.

- Not same in terms of size, length and coverage of area for irrigation.

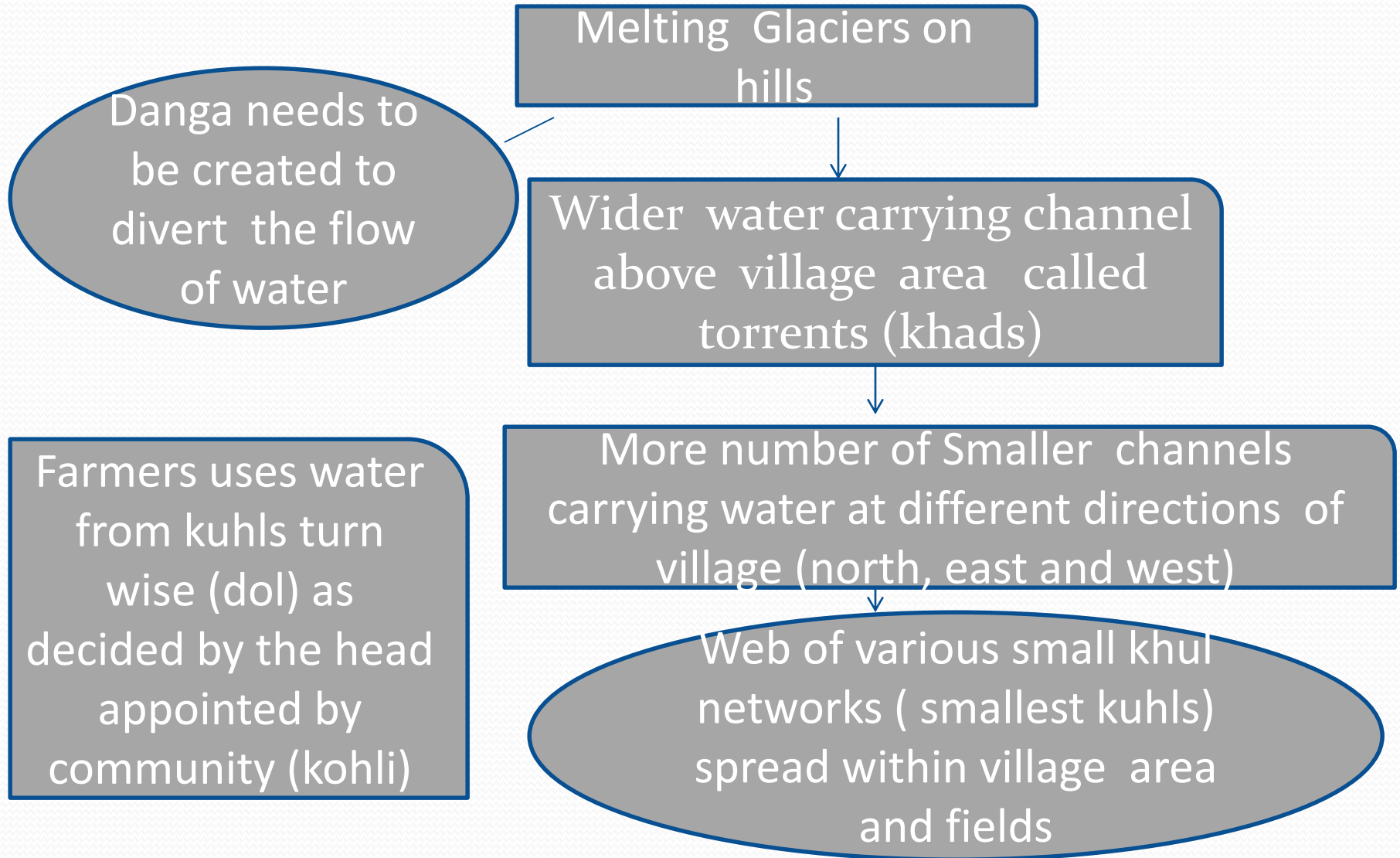
- Vary in terms of the vastness and the slope/gradient of the cultivated area, productivity and the water-holding capacity of the soil of the cultivated area.



Structure of Kuhl



Structure of Kuhl System



How do Kuhls work

- Water Use: day wise turn basis - *dol*. Priority to villages located in the upper altitude.
- The village that comes first to participate in the maintenance activities of kuhls gets the privilege to use the *dol* (turn) first.
- The water master surveys the length of a *kuhl* to check the maintenance requirements before the monsoon since that is the easiest time to stop and divert water- March, April, May, June.
- Conflict: Solved by consensus among the members and with the intervention of senior members of the panchayats.
- Sanction: Fine is imposed mostly in the form of money.

Management of Kuhls

Present day kuhls are maintained by two authorities.

- 1) By the local villagers i.e. managed by the village local community.
- 2) By the state authority i.e. Irrigation and Public Health (IPH) Department.

Kuhl and Management- community

- Committee- headed by a Kohli, President, Secretary, and male representative from each household.
- Task: To organize meetings as and when required regarding repair and maintenance.
- Guarding : Every village has a system of guarding the Kuhl (8-10 people) to avoid any illegal diversion. Keeps a watch on the water flow passing through specific/identified revenue villages.

Water Routes of Chandruhl Kuhl



Use of Kuhl Water

Washing of Clothes



Drinking for animals



Use of Kuhl Water for Building purpose




New context, new concerns

- Agriculture is no longer the only existing livelihood option.
- ✓ Availability of alternative non – farm employment due to opening up of the economy. According to NSSO 2001 survey, the no. of men in the agriculture sector declined - 77 % to 54%.
- ✓ Food grain requirement met through Public Distribution system(PDS).
- ✓ Division of landholdings due to expanding families.
- ✓ Erratic weather of the hills- output from farming not satisfactory.

Other Factors

- Out migration of able bodied men- lack of man power.
- Government take over of Kuhls: Weakened Community bonding – alienating people from management.
- ✓ Villagers get tap water at homes provided by the govt.- neglect of Kuhls as source of drinking water.

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- Concretization of Kuhls- from simple mud channels kuhls became concrete structures.
 - ✓ More maintenance cost when broken.
 - ✓ Low community participation- fall back on govt. aid.
 - Declining status of the water masters- Kohli- want substantial returns for the favours done by their ancestors- lack of good will.

Difference between Natural and Concrete Kuhl



Over Flow of Water in Concrete Kuhl due to Blockage



Impact of Hydro Power Projects

- Emergence of small and micro hydro power projects- 49 commissioned projects.
- ✓ Diverts water to the project - creating new routes
- ✓ Drying of kuhls as water in the local streams (*khads*) have become less
- ✓ Physically destructing the kuhls near the streams.
- ✓ Forcing farmers to shift to rainfed cultivation.
- ✓ Disabled 13 kuhl irrigation systems- disturbance to irrigation. One kulhs serves around 2000 household.

Impact of Hydro Power Projects- contt

- Has dried the traditional source of water i.e. *Baudi* (a deep stoned pit, which is dug where water percolates naturally from the earth surface).
- ✓ Farmers forced to shift to rainfed cultivation.
- ✓ Monopoly of the authority of hydro-projects regarding the water flow distribution- impacted local irrigation
- ✓ Disabled 13 kuhl irrigation systems- disturbance to irrigation. One kulhs serves around 2000 household.
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Dried local khads or streams



Challenges to Kuhls – Narratives

- Market: It has opened the economy, the local residents are now looking for other job opportunities within and outside the area.

For e.g. : " Earlier people of the areas were mostly dependent on farming .The present generation are now educated and they aspire for better jobs and livelihood opportunities elsewhere. Hence, over a period of time, farming as an option has declined and people treat it as a secondary sources in terms of livelihood and earning". (Surender)

- Public Distribution System(PDS): These government shops for distributing grains to the villagers have also impacted the kuhl work for farming.

For e.g. : "New generation does not show any interest for farming and kuhls. PDS has started now and because of this, villagers have less stake in agriculture. Only those who have less land and thus have less produce go to these shops. I am self sufficient so I don't need to go to the PDS shops ". (Madhav Ram)

- Out Migration: Main reason for decreasing participation in Kuhl work.
 - “ Though I participate in the management of Kuhls right now coming from fields, my focus is getting job in the public sector. I am preparing for Banking exam in Chandigarh. The output in agriculture is very low these days and people like me who are young care very less for these activities”. (Ajay)
- Wild Animals: Frequent wild animals entry to the field has also destroyed the farming.
 - “ It is one of the biggest challenges. In lower areas monkeys are destroying farming and in upper areas pigs and nilgai are damaging crops in the fields. They badly destroy the fields. This is one of the biggest reason that people are less interested and that has resulted in less output in the farming sector”. (Dilbagh Singh)

- Climate Change: Fluctuation in climate has also impacted agriculture and kuhl.

“ Now a days weather has changed drastically. Sometimes hailstorm, less rainfall and that damages the wheat crops. Recently the hailstorm and rainfall led to the damage of wheat crops. So what is there in agriculture?” (Pritam Chand)
- Livetock: Cattles and livestock has also decreased in the present times.

“ Earlier there were many cattle's in every household, there number is very high. Now a days very less. I do have one cow and her calf that's it”. (Joginder)

- Stone Mining : One of the biggest challenge.

According to Kohli (Water-master) “The water has gone down. Local people have mined stones . Due to this kuhls channel has gone above the dam surface. We have raised concerns many times. Villagers do mining of stones and sell stones to outsiders. Whom to complain when our own people do not understand?” (Joban Lal)

- Women's participation: It is seen very less.

“Only the male members participate in the maintenance activities of kulhs. Earlier there were no female member but these days 2-3% female members show their presence and they do participate in the kuhls flowing near their house or when it is not too far from home”.
(Madhav Ram)

- Role of the State: State has only concretized the kuhls, the rest of the activities is performed by the villagers.

According to a Irrigation and Public Health Department employee “Government department has done one time repair of Kuhls with concretization of community managed kuhls”.
(Surender Sharma)

- Locals villagers response: They participate very less now.

“These new generation are very lazy and they do not want to work and participate very less in kuhl activities. Agriculture and kuhl need hard physical work which they do not do. I saw them roaming in Palampur city. Very less are interested in work, don't know how things will go in future”. (Suba Ram)

- Committee Member: Success of kuhls depend upon the working of committee members.

I feel very bad, and sad with the current situation as people do not response. I sometimes feel that I must leave the job, but will do so in the worst situation. I start asking people to come and participate in the activities from March, but people only tend to give excuses. If I go in April they still say that there is time and hence no need to go now. Even on holidays (Sunday), they refuse to come.? And this process will continue till the onset of monsoon season”. (Joban Lal)