

Integrating livelihood, and socioecological perspectives to understand rural change: A case study in Odisha, India



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Introduction and research objectives

Farmers as the major socioeconomic actors in rural areas are needed to continue their life in a sustainable manner. To uncover how farmers select and shape their livelihoods and which driving forces influence them, and how livelihood change interplays particularly with broader socioecological dynamics is a crucial research topic especially in the Global South, and need more research on this area to achieve the United Nation's Sustainable Development Goals. In India, which has been rapidly developed recently, livelihoods in rural areas have been reported diversified (Majumdar 2020), and therefore variety of rural situations emerges in different places.

Given the above situation, the research aims at examination of livelihoods of farm households on a case study from Odisha, India, by identifying and explaining livelihood strategies and their dynamics in their socio-ecological context in the past years. Further research objectives are 1) uncover livelihood strategies of target farmers, 2) analyze how socio-ecological context is related to their livelihood strategies, and 3) to address potential drivers of livelihood strategies psychologically.

Theoretical concepts and frameworks

The research plans to combine the following conceptual frameworks or perspectives:

- ✓ A primary analytical framework is the **livelihood perspective** as it is an established analytical perspective used to uncover how farmers came through their livelihood pathways as micro agency (Scoones, 2009).
- ✓ The geographical area of the case study was determined on a socioecological basis - the targeted farmers located in the same irrigation system, thereby the socioecological aspects of rural change is focused, adopting the **Socioecological Systems (SES) framework** (Colding & Barthel, 2019).
- ✓ To analyze more psychologically specific types of drivers for explaining their livelihood strategies, the **Theory of Planned Behavior** (e.g., Ajzen, 1991) is also applied.

Methods

The method of the research uses **semi-structured interviews** with farmers in order to shed light on causal explanation for livelihoods, strategies dynamics, decision-making mechanism. Analysis employs standard techniques for processing and analyzing qualitative data by NVivo 12. Analysis also combine with maps to locate the area, and direct observation of the rural settings.

Target rural area



Samples for qualitative interviews

Features	Information
Total number of main interviewees	30 (some more neighbours and family members surrounded in most interviews and provided information)
Age	Max 82, min 25, average 61.8, median 62
Education	Illiterate 1 (3%), Primary 10 (33%), Upper primary 3 (10%), Secondary 10 (33%), Higher Secondary 4 (13%), Graduate 2 (7%)
Caste	ST 2 (7%), SC 5 (17%), GC 9 (30%), OBC 14 (47%)
Farmland size operated by self/family	<=2.5 acre: 13 (43%), 2.5 acre >, 5 acre <=: 11 (37%) >5 acre: 6 (20%)
Household members living permanently together in the same house	Max 16, min 2, average 5.5, median 5

Results and discussion (preliminary)

Livelihood strategies

- ✓ In the target area, the irrigation scheme determines the agricultural practices with **paddy as a main production crop** especially during the rainy seasons.
- ✓ Most of them do **agriculture (kharif: paddy, rabi: some pulses, lentils), casual work**, or some **business activities (agri-based, grocery, etc.)**, and **employment for public or private** as a household. Paddy is purchased through the government program.
- ✓ Household heads generally continue agriculture, and if households have sons at certain ages, such sons are working outside in most cases. The household heads do not that much receive remittances from sons in such cases, but occasionally receive some.
- ✓ As for the past changes in the past around 10 years, most of the target farmers have continued **the same livelihood activities for over 10 years in the same places**, not completely emigrated out of the place or changed totally. There have been not major changes in terms of main livelihood. Sons have started working (some have gone outside; and others have found the job nearby). Some have tried non-agriculture livelihoods, and currently still continue, but others stopped.

Socioecological system

- ✓ The main socioecological factor which influences the target livelihoods is **the irrigation**. They started receiving the irrigation water around 10 years ago, being enable them continuing paddy cultivation stably during Kharif seasons and mainly increased its unit yield and production.
- ✓ Farmers really appreciate this stable irrigation water supply. If this does not occur, they said they would have suffered from drought.
- ✓ The irrigation scheme needs water management. For that, water users association (WUA) was established. However, most of the farmers interviewed said that **WUA has not functioned properly**. It was said that the management of WUA works only for those who are related, not for all water users (some said there are cases that board members were politically elected). Now, water seems sufficient and farmers are satisfied with it generally. They clean the mud in the related channels which are related only to his own field to get water, not other parts.
- ✓ When any big damages affect water delivery to the fields, there was a case farmers raised such an issue to Panchayat/Gram panchayat and settled, not through WUA as it did not take actions.

Theory of planned behavior

- ✓ This theory tries to explain a planned behavior based on the three factors: **attitude, social norms, and perceived behavioral control**. In this survey, doing something for better livelihood is defined as a planned behavior.
- ✓ First of all, it is noted that **intention to planned behavior is not so high** (though there are some who have aspiration for betterment). Younger generation has more than older generation.
- ✓ **Attitude**: most of the respondents replied the current livelihoods is felt pleasant. They satisfy the current ones and **less psychological necessity to do something for better livelihoods**.
- ✓ **Social norms**: Basically all **decision is made by themselves**. Some just refer to themselves for their livelihood, and others refer to their family, relatives for reference. Most of referral just do the similar livelihoods. Less social community pressure exists, and farmers by themselves chose the current livelihood, although family ties is strong.
- ✓ **Perceived behavioral control**: **Value** (family, attachment to their birth places, good sense to be engaged in agriculture), risk preference (**risk aversion**), **irrigation**, and **government policy** (paddy purchase system) are considered through interviews.

Overall implication (preliminary)

- ✓ **Socio-ecological system greatly defines the farmers livelihoods**, namely paddy cultivation during Kharif seasons with reliable irrigation water supply.
- ✓ This **contributes to climate adaptation for farmers**, and make their livelihoods stable.
- ✓ However, in terms of social mechanisms that irrigation newly brings to the area, **WUA might not have worked as it was envisaged (considered the time frame of 10 years)**. Farmers could be individualistic and the existing village structure helps when big difficulties occur.
- ✓ Psychologically, farmers basically **satisfies their current livelihood referring to their value and risk preference**. Plus, due to the government program to procure paddy from farmers, somehow the life is stable. But at the same time, they might not have attempted for further betterment. Unlike rapid development in urban areas in India, **conventional lock-in might occur**.

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