



# policy brief

Rainfed Fisheries: It is high time to invest on this 'Sub-Sector'

## Fisheries Development is NOT *just* Production Statistics!

### Policy pointers

- **Water bodies** are life-lines of rainfed areas. Numerous water bodies of varying sizes and seasonality of water spread dot the rainfed landscapes.
- **Fisheries** in these water bodies generate incomes, local economy, sport and household nutrition at scale.
- **Neglected for long** in policy and for lack of any significant support services, there is great untapped productivity potential.
- **Large scale experiences** in PACS and RRA Network supported Fisheries programs in Jharkhand and Odisha show the potential and ways of realizing it in partnership with communities.
- **Fisheries in Rainfed Waterbodies** need to be identified as a sub-sector in fisheries policy and adequate public investments be made.
- **Taking development Block** as a unit, inventorying the waterbodies and establishing support services on community institutional platform is proven to be an effective framework for action.

Fisheries Development is not only about statistics of production and exports! In large stretches of rainfed areas of India – from semi-arid to humid tropics, numerous water bodies of varying sizes and seasonality dot the landscapes. Fisheries are integrated with these water systems, livelihoods and household nutrition.

With the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and Watershed Development, many such water bodies are developed and many more are rejuvenated, expanding the scope for local production and consumption of fish. It's time that this is recognized as a 'Sub-Sector' that requires dedicated public investments and institutional service delivery to realize its potential *for local people*.

### Background

Emerging field experiences on fisheries in inland water bodies in rainfed areas are showing greater promise of this 'sub-sector'. *The promise is in terms of meeting the local demand, generating employment and incomes, entertainment and household nutrition.* These could be the sectoral-objectives for public investment unlike production, productivity and export potential which determine performance of the marine fisheries and intensive aquaculture.

PACS supported fisheries program in Jharkhand and RRA Network supported programs in Odisha and West Bengal; earlier experiences of Western Orissa Rural Livelihoods Program; and several other large scale field experiences, are now available, to evolve a framework for public intervention, sufficient to realize potential of this sector.

This policy brief builds on the program design and experiences from PACS & RRA Network supported fisheries program implemented for last three years in Jharkhand (with Vikas Sahyog Kendra-VSK), Odisha (Malkangiri RRA Network) and West Bengal (PRADAN) with process support from WASSAN. These programs have active collaboration with CIFA, Bhubaneswar.

## It is NOT “just technology”!

The nature of water bodies within a Block vary considerably in their size, seasonality, usage and ownership. Smaller farm ponds to small/ medium reservoirs, very seasonal to perennial water spread area, and private to common ownership with varying tenure-rights regime characterizes the water bodies.

### Three core strategies

- Area Approach
- Inventory the water bodies and farmers is necessary
- Organize platforms of fish farmers

The Jharkhand program worked with 423 water bodies (474 acres of water spread area) in three Blocks while the Malkangiri program reached out to 1400 water bodies in 5 Blocks of the district. An **Area Approach** to the program is necessary Development as services need to be organized at scale. Block is found to be an appropriate scale of operation.

The first task is to inventory all water bodies in the selected Block to bring visibility to the water body and the farmer. A GIS enabled, mobile based web application developed as a part of the PACS program is a handy tool to do so. (Please see Box GIS WEB APP).

Higher number of such water bodies requires larger outreach and extensive knowledge dissemination techniques. Community institution is an important strategic element need to reduce transaction costs.

### GIS-WEB-APP Simplifies the Program



An App developed (see [www.wpfish.in](http://www.wpfish.in)) helped in preparing photo, map inventory of the water bodies and in easy compilation of baseline data.

The APP generates pond-based advisories for CRPs to interface technically with farmers. Compiles pond-wise activities data into an M&E shell, helps in estimation of seed requirement and potential yields to tie up with markets.

Table 1: Coverage in three Blocks in Jharkhand in PACS program

Sr. No	Block	Total production (kg)	Total sold fish (kg)	Total Annual income(Rs)	Self consumed (kg)
1	Chattarpur	5896	4893	5,18,100	1014
2	Naudiha Bazar	4177	3547	3,60,690	620
3	Manika	5399	5316	6,37,920	83
<b>Total</b>		<b>15472</b>	<b>13,756</b>	<b>16,68,381</b>	<b>1717</b>

## Simple and Effective Interventions

The interventions needed are simple to start with but process intensive due to small and wide spread nature of water bodies. The interventions are:

**1. Prepare an inventory** the water bodies, assess requirements of repairing and

fisheries-enabling the water bodies. Such measures along with developing new water bodies can be extensively taken up under MGNREGS and watershed development programs.

**2. Set up fingerling and yearling supply channels;** promote required number of private enterprises (using seasonality of waterbodies) to produce adequate number of fingerlings/ advanced fingerlings and yearlings. These will help maximize usage of the seasonal nature of water spread area in some water bodies.

**3. Organise fisherperson** into knowledge sharing groups or organized platforms preferably at about 50 water bodies/ a Gram Panchayat. Establish a fishers' organization (a cooperative or an FPO) at Block level which

provides linkages with Fisheries Department, Banks and market players. With such organization of fishers tenure-rights over waterbodies can be sought for the marginalized.

4. Intensive training to fishers along the value chain, linking them with the fisheries department. **Community Resource Persons** (CRPs) selected from the fishers is found to be very effective in organizing and knowledge sharing. These CRPs are anchored in the fishers' organization.

**5. Promote various value chain enterprises** including those preparing fish-feed with local material, preparation of nets, and preparation of value added products.

With Block as a unit for intervention, having good database at hand and fish farmers organized with a CRP interfacing – the stage will be effectively set for an intensive engagement with fishers on knowledge sharing and service delivery.

## Realising Potential of Rainfed Fisheries

The Table 2 provides a glimpse of potential value realization from the program and the Table 2 above this section, provides a summary of a few case studies from Jharkhand. The gross returns can be around 50 thousand rupees per acre of water spread area, nearly twice that of rice.



**Sudama Bhuiya**, a resident of Kuhkukhala village in Palamu District (Jharkhand), comes from the Scheduled Caste Bhuiyan community, mostly landless and mainly into agricultural labour. Sudama, however with an acre of land, supports a family of fourteen members.

Like most other *Bhuiyan* families, they forced to migrate to Gujarat and Delhi in search of labour. In 2012, a 100x100 feet farm pond was constructed with support from the MGNREGA, for irrigation. As the saying goes, the fish lives in water but doesn't consume water.

So two years after it was constructed, the family stocked fish seed in the pond in 2014. It took an investment of 2500 rupees to stock 10 kg of fry from a vendor in Daltonganj, the nearest town and district headquarters. They fed rice bran, mustard oilcake and other locally available feed to the fish regularly.

Within six months they harvested 300 kilos of fish. They consumed 50 kilos at home and sold the rest at 120 rupees for a kilo. They made a net income of 22 thousand rupees in six months, something they could never achieve from an acre of land in their lifetime. Despite a low rainfall in 2015, their net income grew to 30 thousand rupees due to improved practices.

They say that two consecutive years of good income from fishery has given them a new hope and for a change, dreams.

**“There is income to store grain stock for the year and fish to eat at home. It has inspired us to think of even more”**, says Sudama.

**Table 2: A glimpse of impact through few case examples.**

S.No	Farmers Name	Pond size (acre)	Water Availability (Months)	Fingerling Stocked	Investment (Rs)	Harvest (Kgs)	Gross Value (Rs)
1	Mithun Kumar Paswan	3 acre	9 month	23 kg + 2000 pieces fry	9000	1500	150,000
2	Rajdev Mehta	2 acre	9 month	12.5 Kg	5000	850	80,000
3	Sudama Bhuiyan	0.23 acre	6 months	10 kg	2500	251	30,000
4	Satyendra Singh(nursery)	0.12 acre	10 months	25 lakh spawn	6000	2, 38,000 fry	71,600
5	Sitaram Singh	3 acre	12 months	25 kg	15000	930	150,000

In case of small ponds of say 0.10 acres (*Happas dug for protective irrigation*) the realization is about 20 to 30 thousand rupees per year, as in the case of West Bengal and Odisha; this is small but significant income without much effort and helps farmers to diversify. Such farm ponds were extensively dug under MGNREGS.

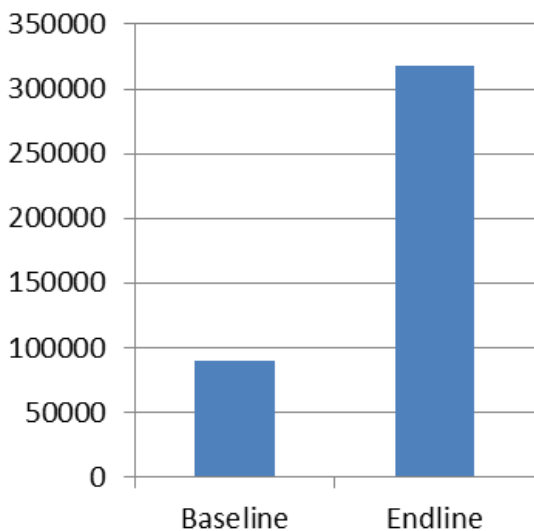


*At an investment of 10000 rupees per water body, this requires an investment of Rs.10 crores if taken up in about 20 blocks in a state on pilot basis. With a minimum of 2 quintals per acre enhancement in yield, the investments can be paid back in less than two years and results in substantial increase in local consumption and it increase family nutrition.*



**Claiming Rights:** Case of Sukhnadiya Talab in Chattarpur block, Jharkhand, where a dam was constructed under the DPAP, local people's land was submerged. Hence, the fishing rights there shall be given to the locals only - K. Srinivasain, District Collector, Palamau district, Jharkhand

### Income from Fisheries in Sampled Households (Rs)



*It is time to recognize the fisheries in rainfed water bodies as a 'sub-sector'. It is time to invest comprehensively to realize the multiple benefits to the marginalized communities. Benefits, in terms of livelihoods, income and nutrition while making these regions move towards self-sufficiency in fish consumption.*



**Fish and Food and Nutrition Security:** Family of Rajdev Mahto cooking fish for their guests and family



Children enjoying **Fish Harvest** in Namodar Panchayat, Manika block, Latehar district, Jharkhand