

SAFE-World Project/Initiative Summary

Country: Bangladesh

Project/Initiative Title: IPM in Fish-Rice – Aquaculture – CARE (INTERFISH, NOPEST, and GOLDA)

1995 (NOPEST)

Scale: Many communities

Nos. farmers: 150,000

Hectares: 90,000

40,000 – over 5 yrs (NOPEST)

Agro-Ecological Zone: I

Improvement types

1x	2	3x	4x	5x	6x	7	8	9
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Success and Limits to spread

Success	Limits
1c,3c	3a,2b

A. Key Impacts

A1 – Productivity

	Before/Without	After/With	% change
Rice dry season (IPM Fish/Rice)	3900 kg/ha	4200 kg/ha	8
Rice dry season (NOPEST)	4700 kg/ha	5100 kg/ha	9
Rice wet season (IPM Fish/Rice)	2700 kg/ha	2900 kg/ha	7
Rice wet season (NOPEST)	2800 kg/ha	3330 kg/ha	19
Fish (GOLDA)	-	1450 kg/ha	New crop

A2 – Impacts on natural capital

- ?? Fish in rice fields
- ?? Diversification of crops (pulses, vegetables and forage crops on rice dykes) and fish (tilapia and carp)
- ?? 80% of participating farmers stop using insecticides.
- ?? Farmers improve their soil fertility.
- ?? They increase the biodiversity in their rice systems by adding fish, vegetables and trees.
- ?? They become more sensitive to environmental issues.

A3 – Impacts on local community (social capital)

- ?? 6,000 FFS conducted
- ?? The project emphasises farmer empowerment and informed decision making. Women farmers are given the same attention as men farmers.
- ?? The dependency on external inputs is decreased.
- ?? By promoting collective agricultural activities, the project enhances community planning

and actions.

- ?? The project facilitates the flow of agronomic information between communities and local line agencies.
- ?? To foster the creation of sustainable community-based organisations (CBOs), the project groups farmers into Farmer Field Schools (FFSs), trains potential farmer leaders, and provides basic literacy education to FFS members. The project is beginning to look at the FFS as a viable group to look after community interests.

A4 – Impacts on households and individuals (human capital)

- ?? Substantial increase in income for diversification of farm system (from mono cropping rice to rice, fish, vegetables and forage)
- ?? By reducing pesticide use, farmers minimise the health hazards to themselves and their families.
- ?? Increased rice field productivity through rice IPM, rice fish, and dike crops increase income and broaden the diet of the household.
- ?? The sharing of experience and learning through learning sessions and experiments in the study plot enhance decision making, build confidence and as a result create better leadership in the community.
- ?? By working with Children (Children Participation Initiative), the project develops future farmers who will have better understanding of the ecosystem and IPM.

A5 – Key changes in farm / regional system

- ?? 80% of FFS graduates no longer use pesticides
- ?? 150,000 households are now food secure
- ?? 90% reduction in use of pesticides
- ?? 38% increase in incomes
- ?? Farmers increase their total output by producing vegetables, fish, and trees in their rice systems.
- ?? Farmers reduce input costs by not using insecticides and by reducing the amount of urea they use.
- ?? Future productivity is enhanced because farmers increase their capacity to experiment and innovate.
- ?? The use of locally produced inputs (seed, botanical pesticides, organic fertiliser) is increased.
- ?? The use of urea is decreased in favour of more balanced chemical fertiliser mixes.
- ?? The use of water has not noticeably changed.
- ?? The project increases food diversity, nutritional value and yields. The increased capacity of farmers to innovate and make their own decisions means increased long-term food security.
- ?? Farmers become less reliant on purchased chemical inputs.
- ?? More farmers are producing their own rice and vegetable seed, fish seed, vegetable and tree seedlings, thus reducing dependence on more distant sources of these inputs.

B. Types of Sustainable Agriculture Improvements

Type 1: Better use of available renewable natural capital

- Type 2: Intensification of single sub -component of farm system
- Type 3: Diversify by adding new productive natural capital and regenerative components
- Type 4: Better use of non-renewable inputs and technologies
- Type 5: Social and participatory processes leading to group action for making better use of natural capital
- Type 6: Human capital building through training-learning programmes
- Type 7: Access to Finance
- Type 8: Add value by processing to reduce losses and increase returns
- Type 9: Add value by direct or organised marketing of produce to consumers

	Yes/No	Narrative
Type 1	x	
Type 2	x	
Type 3	x	The project developed rice -fish, vegetable dike cropping, fish seed production, and trees-on-dikes. The project emphasises LEISA. Trials with green manure and with a non-flooded rice system from Madagascar are presently under way.
Type 4	x	
Type 5	x	The project practices participatory methods in all activity and phases of the project. It promotes participatory baseline assessment, goal setting, planning, monitoring and evaluation. It works with group of men and women farmers. The project challenges the traditional role of women in agricultural day-to-day activities. The project puts the farmer in charge of experiments and trials.
Type 6	x	Children are also included through our Children Participation Initiative school program and the literacy skills of adults are enhanced through our Farmer Access to Information program.
Type 7		
Type 8		
Type 9		

C. Key Lessons: Success, Spread and Constraints

C1 – Key Lessons Learned

- ?? Adoption rates 50-60% in first year of IPM, rice to 1000% by end of second season
- ?? On a technical level, we have learned that our basic diversification techniques which involve converting a rice monocrop into a rice-fish and vegetables-on-dikes system are readily and sustainably appropriated by farmers.
- ?? Teaching through the FFS using the experiential method and a participatory approach is more appropriate than the old transfer-of-technology approach.
- ?? The FFS, originally set up as a group to learn agroecological techniques and approaches, also has the potential to address community issues.

C2 – Aspects of local/national context contributing to success

- ?? Farmers' eagerness to innovate

- ?? Our NGO staff having received substantial training in facilitation.
- ?? An Asia-wide interest in IPM

C3 – Limitations preventing spread

- ?? A history of high input agriculture.
- ?? The disempowerment of farmers in their communities

C4 – Policy issues

- ?? Top-down approach of government agencies.
- ?? Lack of organisation at the local level.
- ?? No government support of farmers in marketing

C5 – Scaling-up

- ?? Involvement of government agencies.
- ?? Government control over the influence of agrochemical companies

D. Contact Point for Project/Initiative

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E. Project Narrative

National Integrated Pest Management for Rice Programme, Bangladesh

Integrated Pest Management for rice is being implemented through three projects in Bangladesh, INTERFISH, NOPEST and GOLDA, and are supported by DFID and the EU (Desilles, 1999). They involve farmers attending farmer field schools ('schools without walls') during a whole rice season. They meet each week to learn a new set of agro-ecological principles, concepts and terms relating to rice, pest and predator management. This is an adult-education approach to increasing food production. Some 6000 farmer field schools have been completed, with about 150,000 farmers adopting more sustainable rice production. The programmes also emphasise fish cultivation in paddy, and vegetable cultivation on rice field dikes. Fish can only be raised if pesticides are not used.

Farmers have benefited in several ways: most have reduced or stopped using pesticides with no loss of rice yield, so reducing the costs of production; they raise fish in the rice fields which provide a new source of protein and income; and vegetables are grown on paddy field dikes. Some are now experimenting with shrimps and taro in rice fields. As a result, the 150,000 participating households are now food secure throughout the year.

Rice yields have improved by 5-7% (3.9 to 4.2 t/ha for irrigated and 2.7-2.9 t/ha for rainfed rice), and costs of production have fallen owing to reduced pesticide use. Some 80% of farmer field school participants no longer use pesticides. The fish-rice-vegetable systems have been shown to produce synergistic benefits: additional income from fish is \$156/ha, from vegetables on dikes \$23/ha, but fish and vegetables together bring an additional \$250/ha. This can buy 2000 kg rice - enough to feed 6-7 people.

NOPEST

The project facilitates lessons on quality seed production, collection and preservation. The participants practice it in producing quality rice seed, vegetable seed and fish seed as well. The project intends to promote new marketing strategies starting in January 2001.

Most outstanding results

- ?? Increases in and diversification of agricultural production.
- ?? Improvements in nutrition.
- ?? Large degree of involvement of women in a society which usually confines and constrains women.
- ?? Some degree of empowerment.