

Dedication



Late Prof. Dr. M. C. Nandeesh

CARP-SIS POLYCULTURE: A NEW INTERVENTION TO IMPROVE WOMEN'S LIVELIHOODS, INCOME AND NUTRITION IN TERAI, NEPAL

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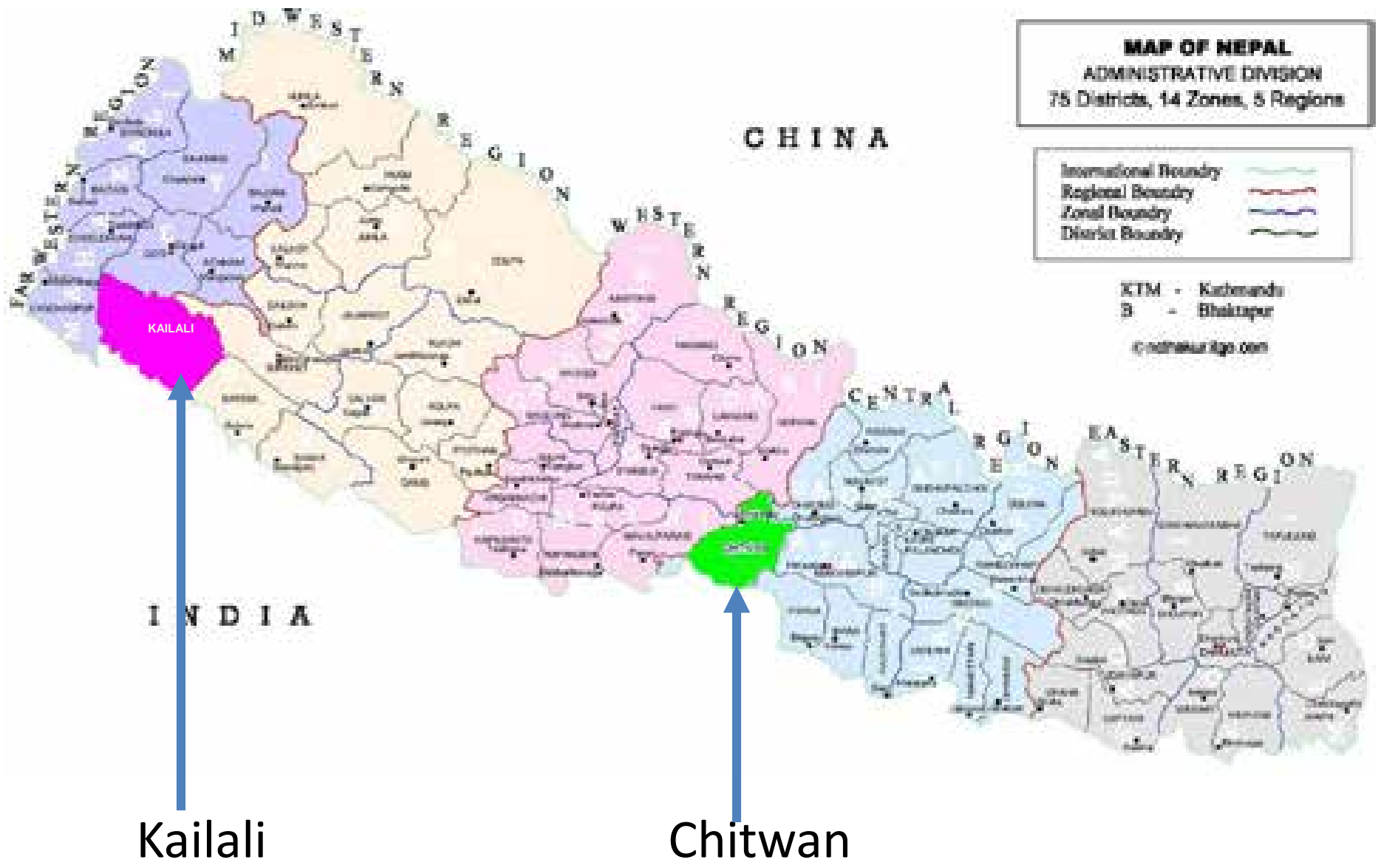
Outline

- Carp-SIS-Prawn polyculture
- Carp-SIS polyculture
- Project activities
- Project output
- Project outcome
- Conclusion

Carp-SIS-Prawn polyculture (2008-2010)



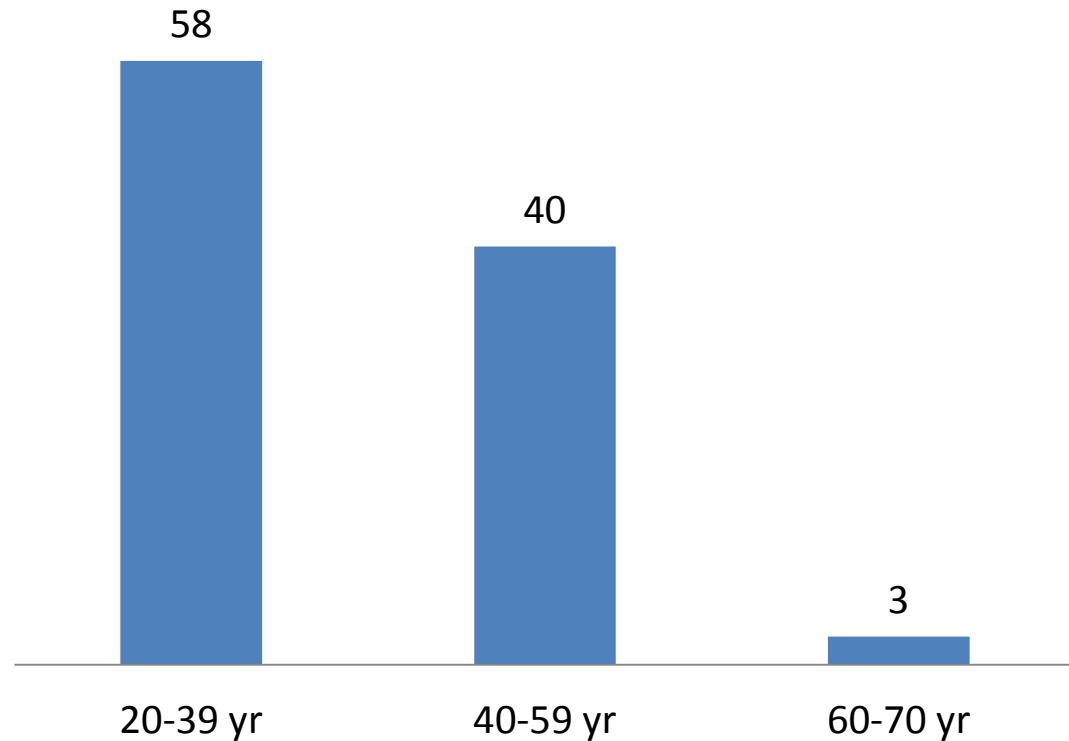
Project site



Target group

- Total no. of beneficiaries – 136
- 95% Tharu women – ethnic group
- Main age group- 20-39 yr.

Age distribution of women farmers (%)



Objectives

- a. to improve the nutrition of women and children through increased intake of nutrient rich SIS
- b. to increase household income
- c. to empower women

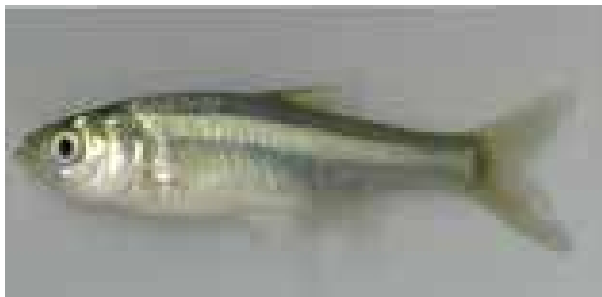
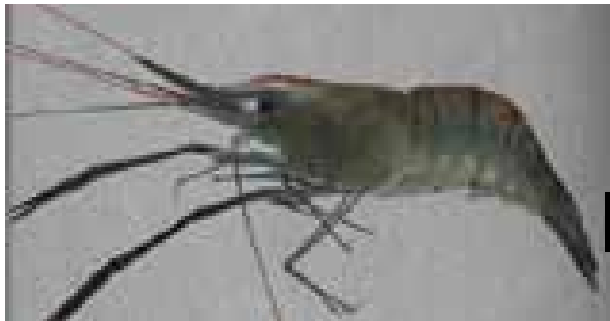
Micro-nutrients in fish (Roos et. al., 2006)

Fish	Vit. A (RAE/100g raw clean fish)	Ca (g/100 g raw clean fish)	Fe (mg/100 g raw clean fish)	Zn (mg/100g raw clean fish)
<i>Esomus danricus</i> (SIS)	890	0.9	12.0	4.0
<i>Amblypharyngodon mola</i> (SIS)	2,680	0.9	5.7	3.2
<i>Puntius sophore</i> (SIS)	60	1.2	3.0	3.1
Silver carp	<30	0.9	4.4	-
Mrigal	<30	1.0	2.5	-

RAE=Retinol Activity Equivalent



**Household
Income**



**Household
consumption to
improve nutrition**

Drawbacks

- **Prawn seed: Brought from Bangladesh**
 - Expensive
 - High mortality
 - Not sustainable
 - Though Prawn has high demand among farmers.
- **Mara (*Amblypharyngodon mola*)**
 - Unavailable in the project site - Chitwan
- **Niche utilization**
 - 4 carp species might not utilized all niches

Sustainability ??????????

Carp – SIS polyculture (2011)





**Household
Income**



**Household
consumption**

Stocking density (No./ha) of Carp and SIS

Species	No./ha
Rohu	2,000
Mrigal	500
Silver carp	3,000
Bighead carp	1,000
Common carp	2,000
Grass carp	1,500
SIS (Dedhuwa/Pothi)	30,000
Total	40,000

Activities

- Stocking of Carp and SIS fingerlings
- Fertilization: Urea and DAP @ 470 g/100 m² and 350 g/100 m²
- Feeding: daily, dough of rice bran and mustard oil cake



- Partial harvesting of SIS for household consumption



- Final harvesting



Production

- Average total fish production was 4.4 t/ha/y, higher than national average.

- Carp and SIS contributed 86% and 14% to the total production, respectively.



Extra production



Consumption

- Consumed 48.7% of the total production on average
- Fish consumption rate was 3.7 kg/caput/y
- Fish consumption rate - double of national average



Income

- Farmers sold surplus carp i.e., 51.3% of the total production.
- Income - NPR. 3,025 per household in 270 days.
- Income spent on household expenditures, children school fee etc.



Marketing

- Marketing: not a problem because small production.
- Farmers sold carp in neighbourhood.
- Customers come to farmers' house to buy fish.
- Large quantity was sold during final harvesting .



Capacity building

Farmers' training



Eighteen farmers served as trainers in Finnish project



Field trip



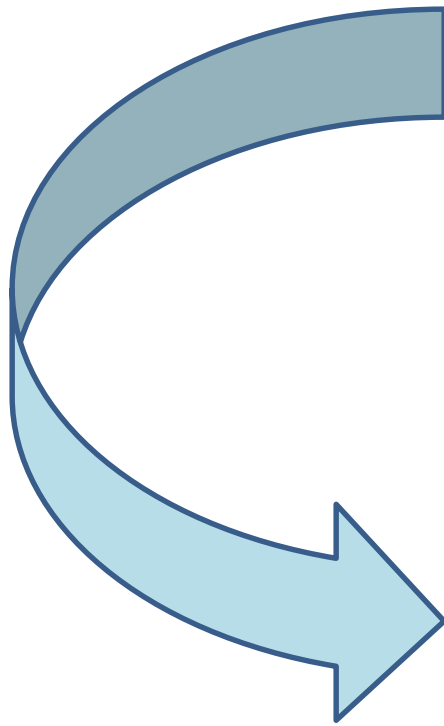
Capacity building.....

- Six women fish farmers' groups and one cooperative is formed.
- Member's no: 17-26 member/group
- Collects NPR 10-25/month/member which they utilize in repairing of pump set, disbursing loan to needy member at low interest i.e., 1%/month.
- Highest loan disbursed was NPR. 5,000.



Outcome

Self-confidence improved



Farmer

New Cooperative
President



Outcome

Got opportunity

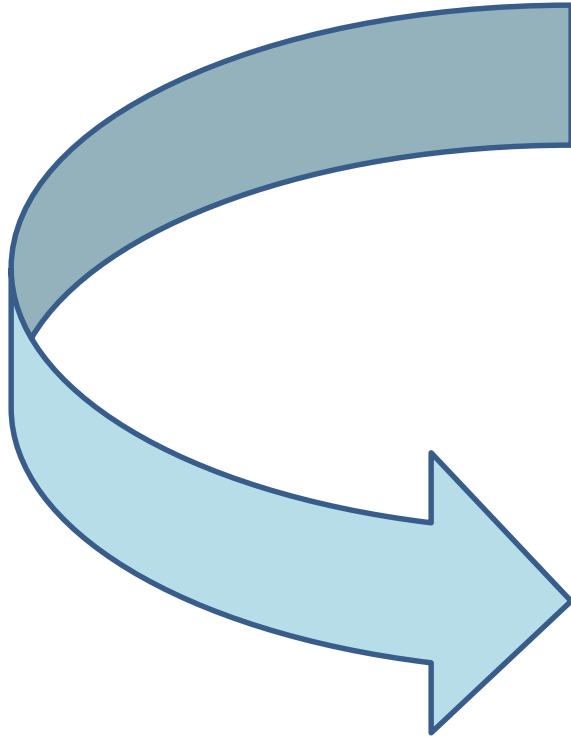
Farmer

Field Supervisor



Outcome

Improved participation



Conclusion

- Was able to
 - increase the food, income and nutritional standards of women and their children in a marginalized Tharu community.
 - to empower women through income generation, pond ownership and capacity building.
 - established SIS as a high nutrient value fish.

Ways forward.....

- Up scaling of the approach to new areas
- The approach is being replicated in four districts by IAAS, AFU and NGOs.

1. Twinning support for development of women fish farmers' organizations in Nepal (2012-2013) - Government of Finland
2. Carp-SIS polyculture in enhanced system (2013-2015) - Aquafish CRSP



A photograph of five children standing in a row outdoors in a village setting. From left to right: a girl in a brown shawl holding a small fish, a girl in a purple hoodie holding a fish, a boy in a yellow and white hoodie holding a fish, a girl in a blue denim jacket and pink hat holding a fish, and a girl in a pink jacket and red hat holding a fish. In the background, there are white buildings, a wooden bench, and trees. The text 'Thank you' is overlaid in pink at the top, and 'Embassy of Denmark to Nepal GAF4, Aquafish CRSP' is overlaid in pink at the bottom.

Thank you

Embassy of Denmark to Nepal
GAF4, Aquafish CRSP