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The U.S. Government's Global Hunger & Food Security Initiative

# Bangladesh aquaculture and horticulture for nutrition study:

## Rationale, design, accomplishments and challenges

Patrick Webb

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**UC DAVIS**  
UNIVERSITY OF CALIFORNIA

**Tufts**  
UNIVERSITY

GERALD J. AND DOROTHY R.  
Friedman School of  
Nutrition Science and Policy



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## U.S. GOVERNMENT PARTNERS





## INTEGRATING THE WORK OF MULTIPLE INNOVATION LABS

1. Can we *learn more* by combining forces (expertise in horticulture, aquaculture, nutrition)?
2. Will we see more *measurable impacts* on diet quality and nutrition by *combining* agriculture interventions?
3. Is there potential *value-addition and sustainability* of moving 'down-stream' to introduce non-traditional drying and storage interventions?





## STUDY APPROACH

- Longitudinal panel survey in 3,060 households located across 102 unions of the FTF zone of influence.
- Sample frame mimics that of FTF baseline survey (different households but same unions/communities).
- Respondents interviewed twice a year over 2 years on aquaculture, agriculture, post-harvest process, market, food safety and dietary habits.
- Embedded sub-studies of technology adoptions and use.

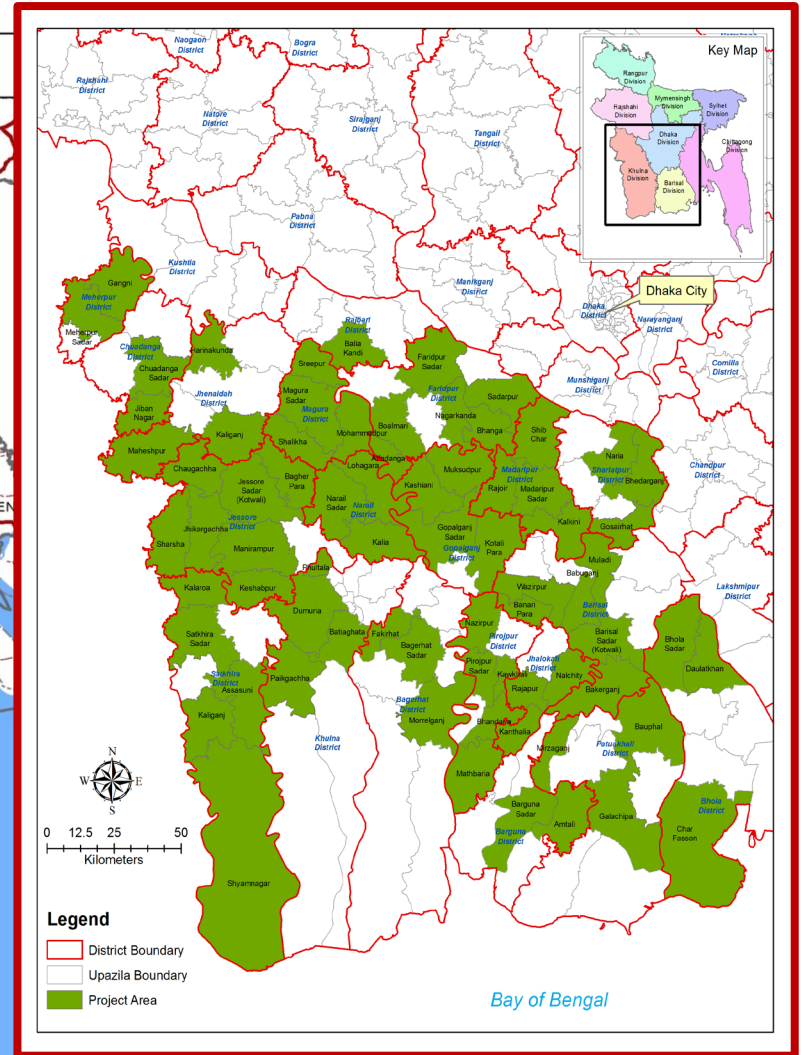
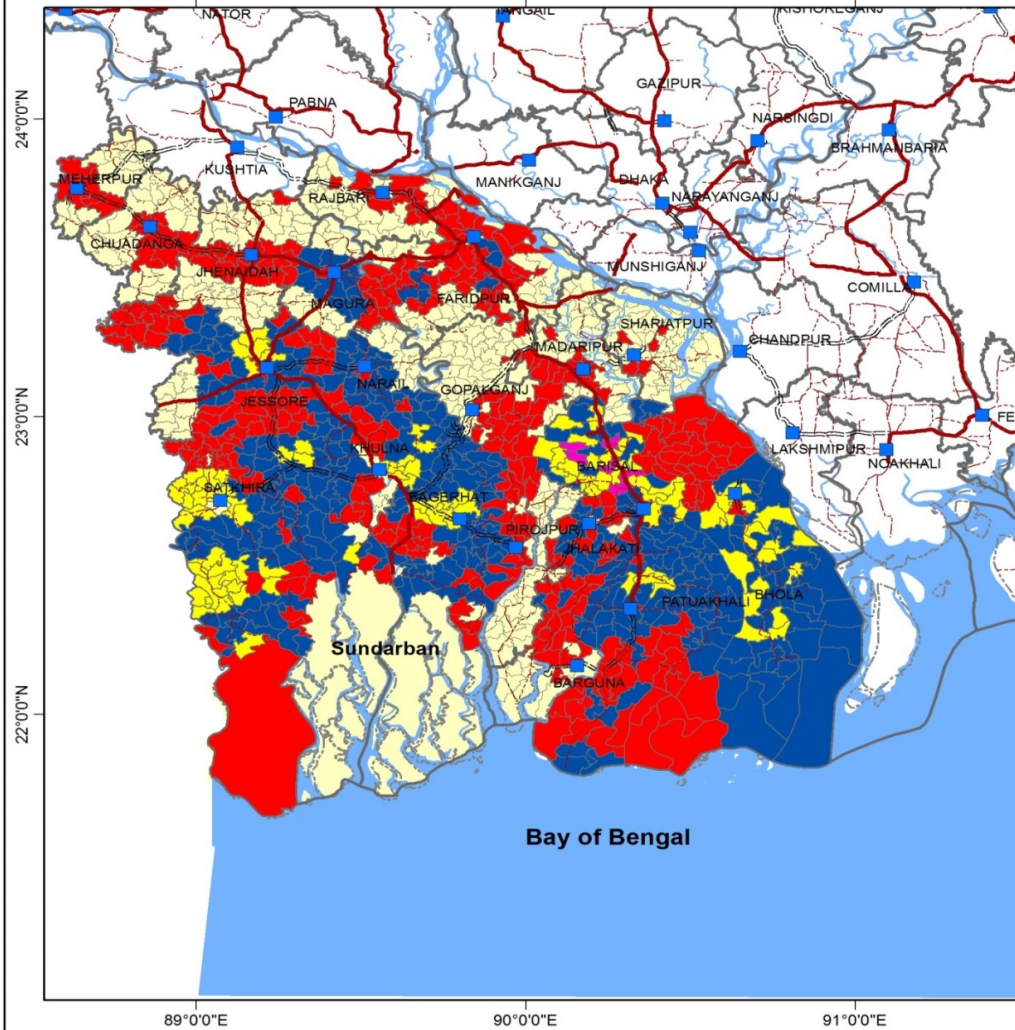




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## Overlapping Working Areas (AIN, FAO, CIP, AESA, SHIKHA, SPRING Projects)





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## POLYCULTURE



Small Fish

Big Fish

Rice

Fruits



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## Nutrient-rich foods consumed (US\$/cap/week)

	Aqua. <i>or</i> Hort. alone	Aqua. <i>with</i> Hort.
Vegetables	0.41	0.44
<b>Green leafy veg.</b>	<b>0.04</b>	<b>0.07</b>
Meat	0.36	0.41
<b>Milk</b>	<b>0.11</b>	<b>0.56</b>
Fruits	0.31	0.39
<b>Big fish</b>	<b>0.51</b>	<b>0.63</b>
Small fish	0.12	0.20





## FINDINGS

1. **Positive multipliers** from concentrating investments *within* ZOI.
2. Co-production of aqua+hort = **more output and sales of both**.
3. Higher production diversity associated with **more diet diversity of both mother and child**.
4. Success in aquaculture = i) more educated, ii) less poor, iii) more **labor**, iv) more **investable cash**, v) self-trading (able to transport).
5. Access to extension guidance very limited (mainly from TV!), most of it on cereals production - little on **value chain**.



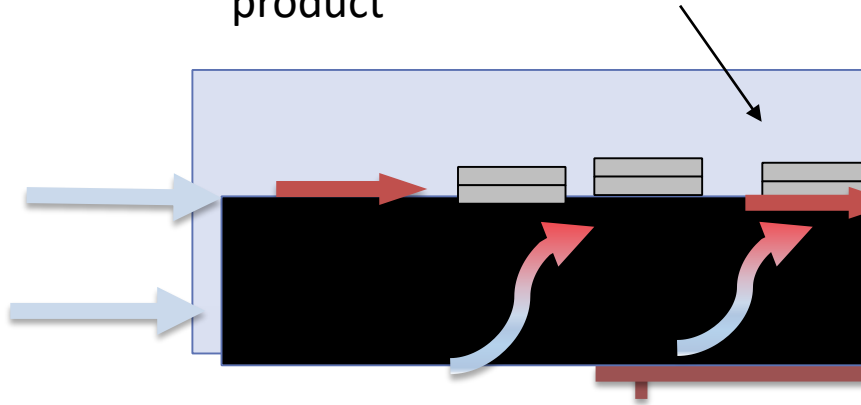




## Solar chimney: income and dietary gains?

Air flow is concentrated in a small cross section to cause high airspeed past product

Air enters front of dryer

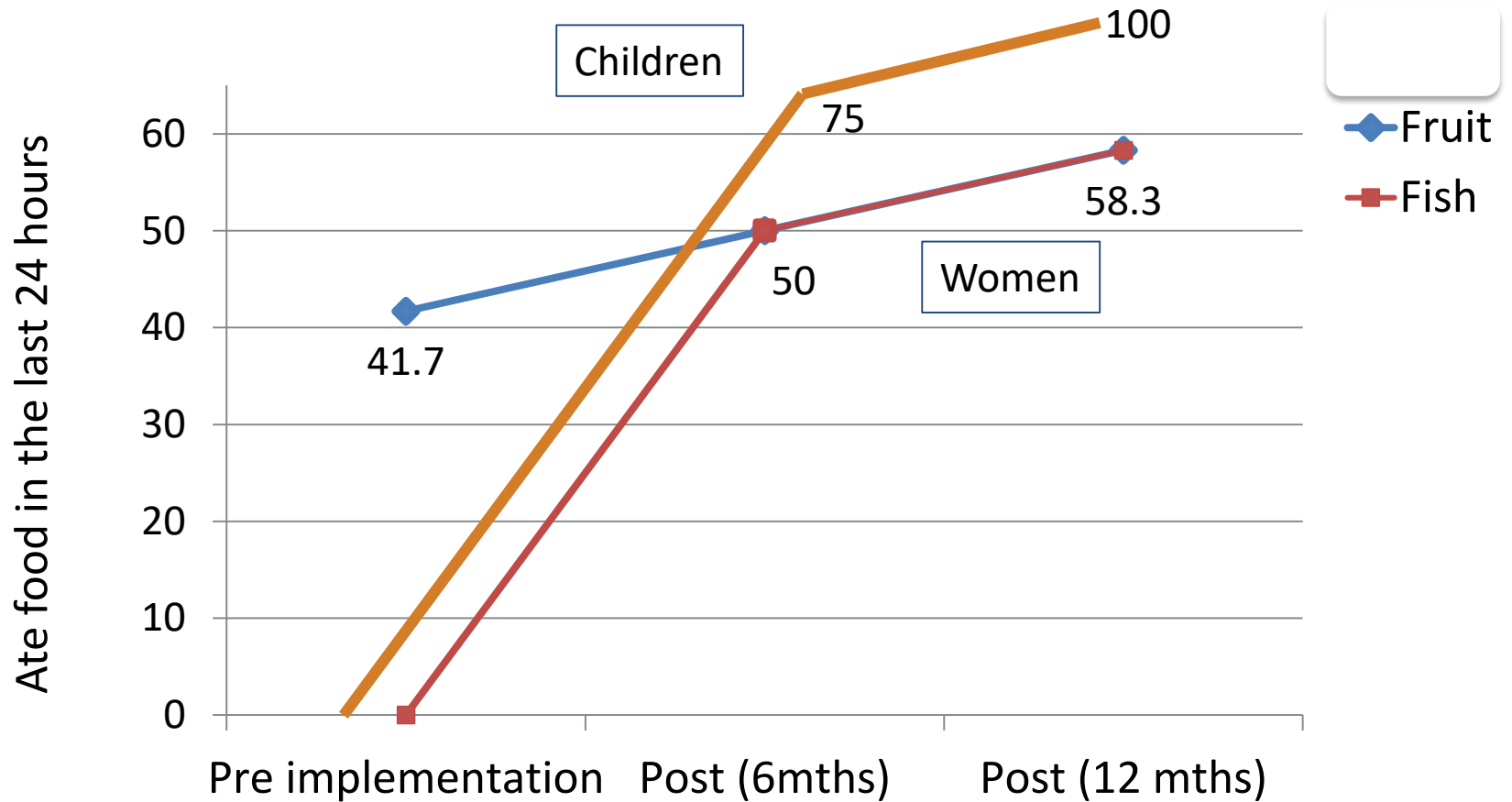


80 cm high 'table' covered with black plastic film is placed over the trays



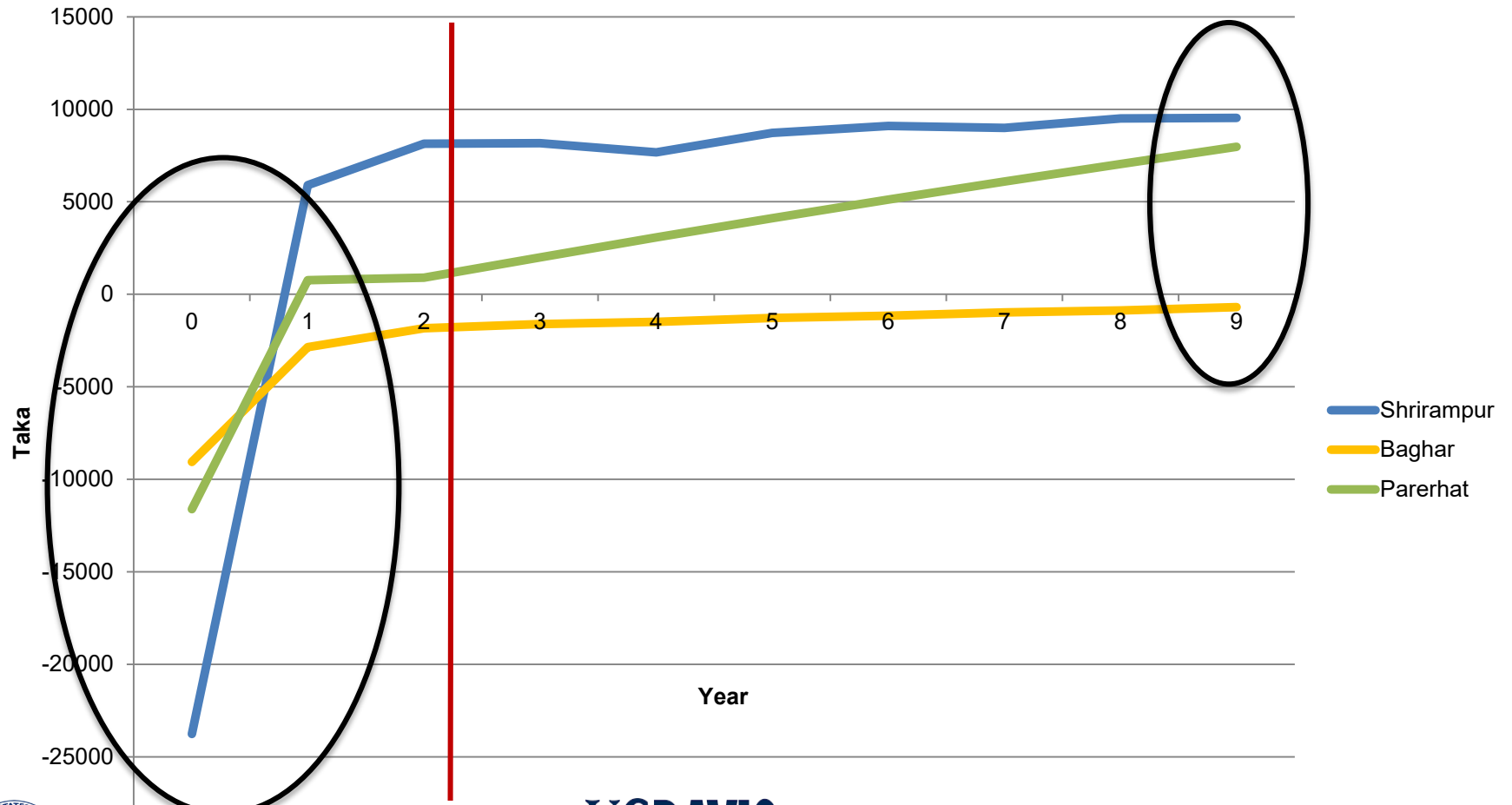


## CHIMNEY DRIER IMPACT ON DIETS





## Discounted annual flow of benefits: chimney dryers





## CHALLENGES

- Different Innovation Labs have different procedures and cultures, types of IRB, approaches to analysis, priorities for journal outlets, etc.: +ve/-ve
- Different disciplines use very different standards of proof (sample sizes, duration of experiment, statistical signif.)
- 'Access' to missions/practitioners/governments differs across labs, so rate of findings uptake varies.





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