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Seminar “Community of Practice - Actie onderzoek duurzame gebiedsontwikkeling”, International Agricultural Centre, Wageningen,11 March, 2008.

Participatory research on the effectiveness of drainage – an example from the Red River Delta, Vietnam

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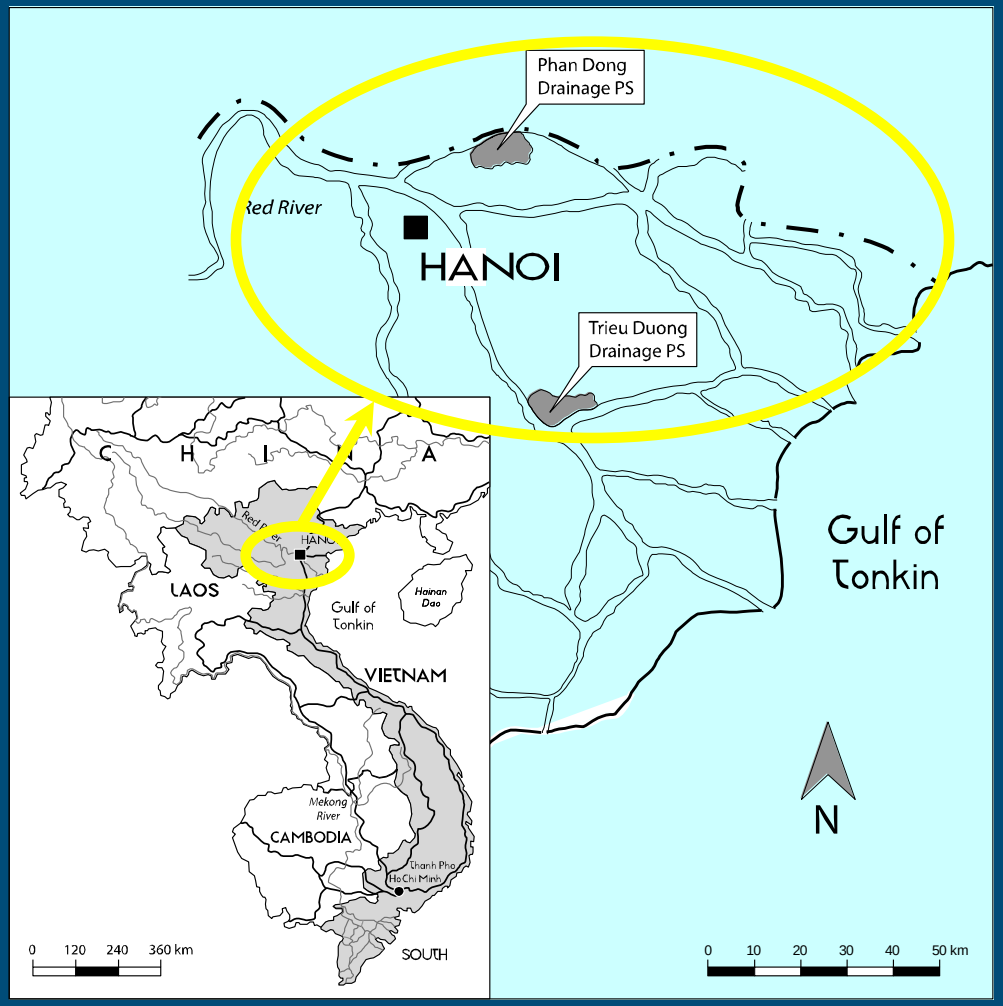
Effectiveness of drainage in the Red River Delta

- Polders: 1,000 – 10,000 ha
- Centuries-old systems
- Densely populated (1, 000 persons per km^2)
- Rainfall 300 to 600 mm in a 3-5 day period
- Rice (2x) followed by winder crop (vegetables, maize)



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Hypothesis of study

Capacity (physical infrastructure) and operation (institutional infrastructure) of the drainage systems constrains the performance of pumping stations regardless of their discharge capacity

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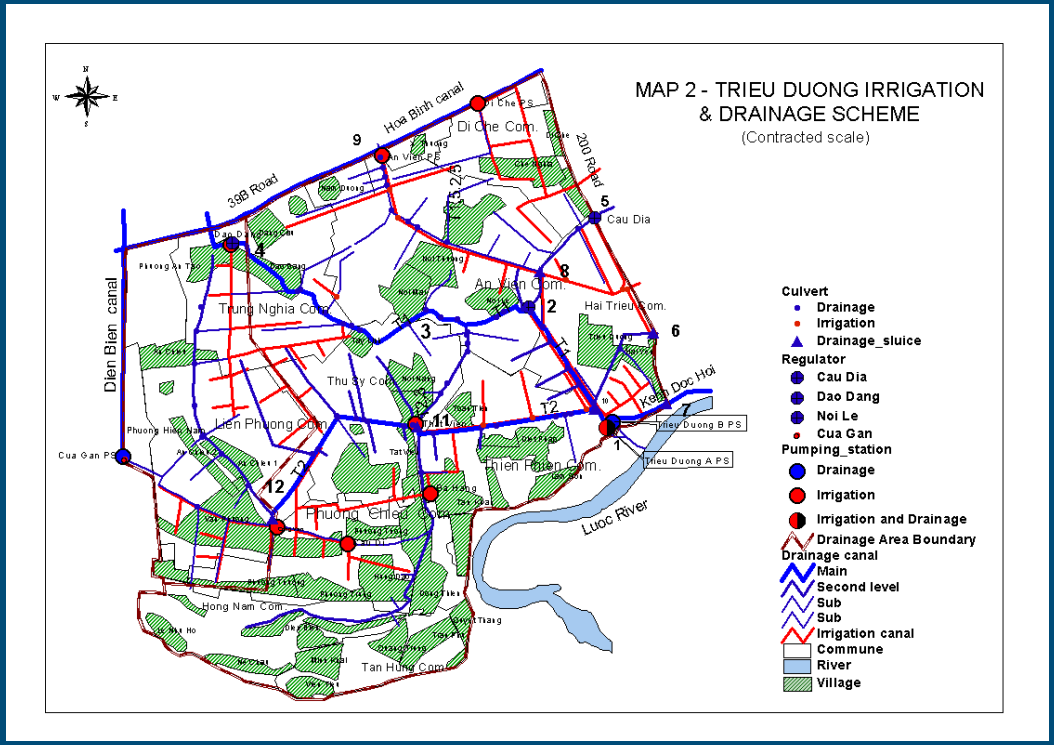
Complex infrastructure (physical)

Dual purpose irrigation & drainage system

Problems:

- System gradually expanded over time
- O & M poor
- Pressure on land increasing ➔ less storage



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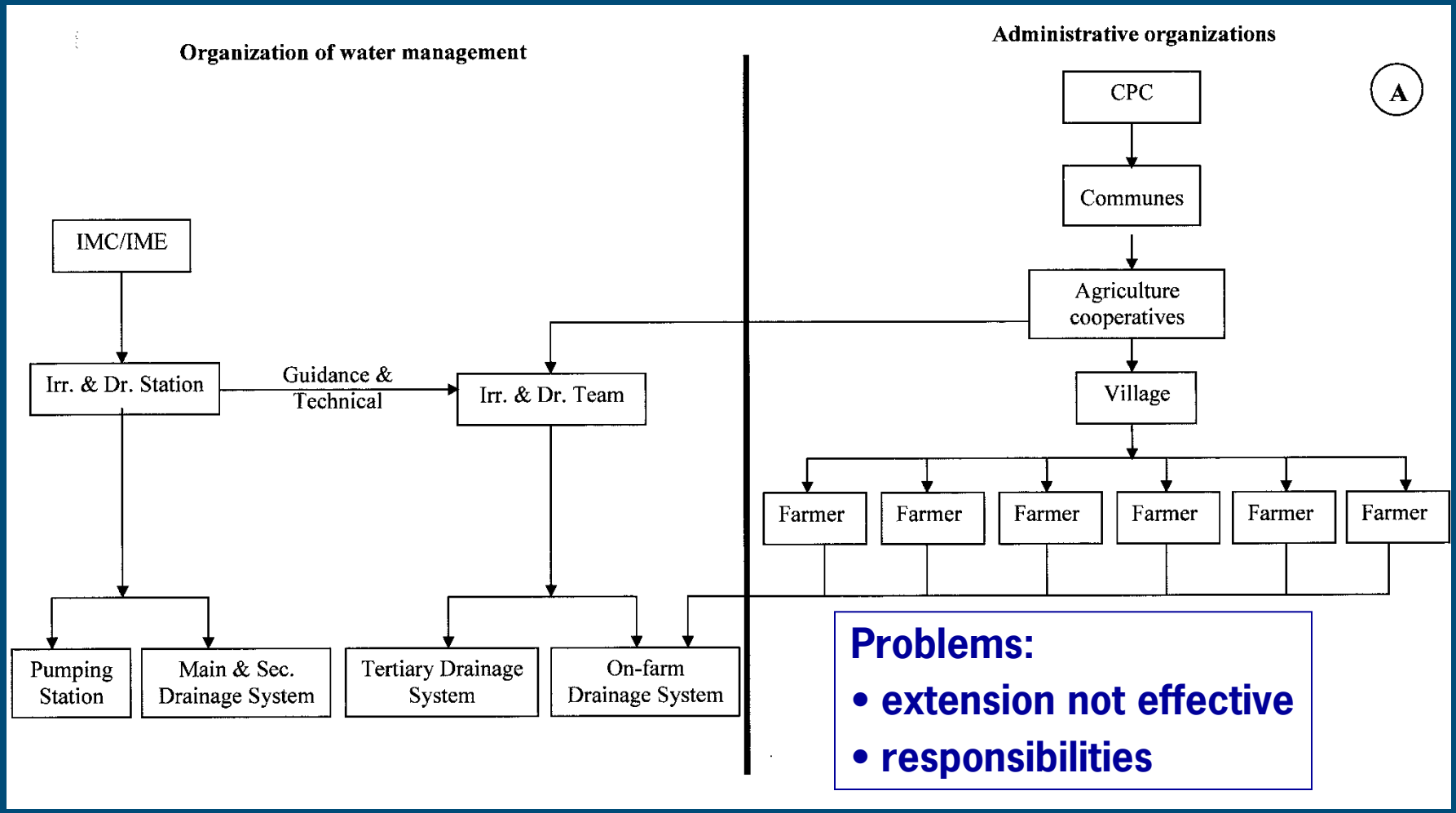
Complex infrastructure (institutional))



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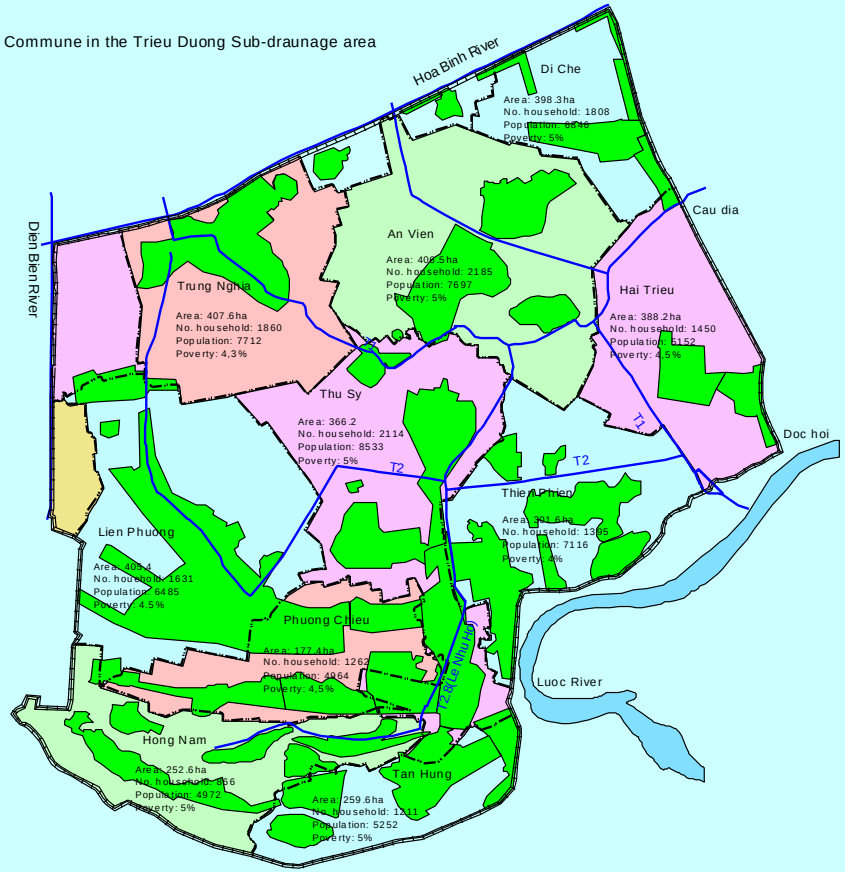
Complex social structure: many communities



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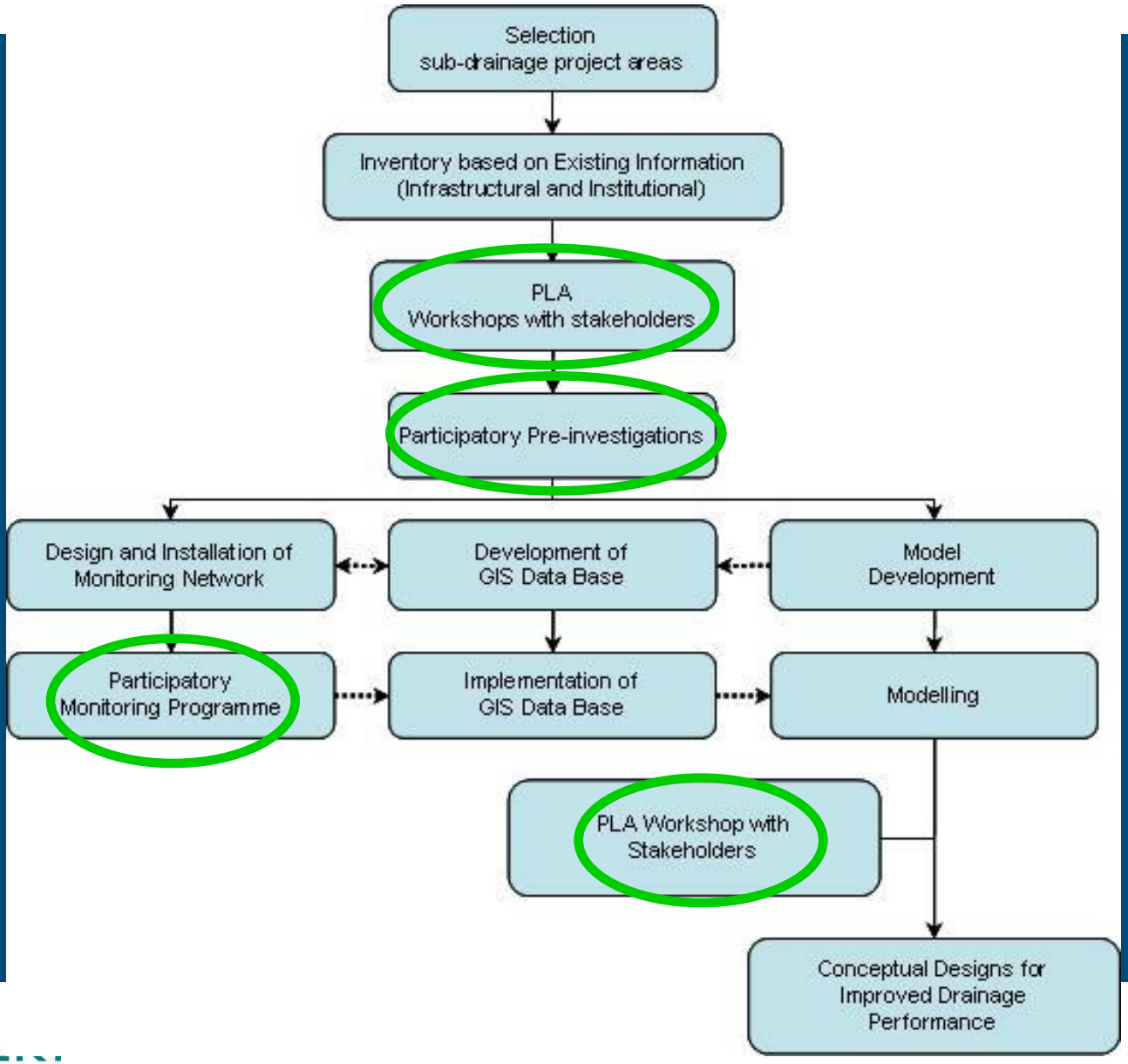
Participatory research approach

Partners:

- Vietnam Institute for Water Resources Research
- Alterra
- Development for Women and Children



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PLA Workshop with stakeholders

Objectives:

- To establish Sub-project Drainage Committees
- To quantify the stakeholder's views on the problems, constraints and improvement options

Participants:

- Provincial Department of Agriculture and Rural Development (DARD) and People's Committees;
- Irrigation and Drainage Management Committees (IDMC) and Hydraulic Groups;
- At commune level: leaders of the People's Committees and Women and Farmer's Associations;
- At village level: head of villages, irrigation teams and farmers;
- Study team.

Outcome PLA Workshops

	Trieu Duong Sub-drainage Area	Phan Dong Sub-drainage Area
Rank no	Problem	Problem
1	Lack of culvert gates and valves	Some drains are too small
2	Lack of regulators	Inadequate regulations for violation's)
3	IDMC is not active due to lack of funding	Regulators are operated improperly.
4	It is not possible to regulate water levels in sub-areas	Budget to dredge the drainage canals is insufficient.
5	Drainage outlets to the rivers are too small	Operation in (some) sub-areas hampers the functioning of the main system.
6	Investments are not done systematically	Monitoring by local authorities is not in time.
7	Instructions from leadership are inadequate	Monitoring of IDMC is not in time and careless.
8	Awareness of farmers is insufficient	Supervision, assessment, reports are unrealistic.
9		Awareness of farmer is limited.
10		Propaganda on canal protection is limited / has constraints
11		Pumping station is the main source of the problems.

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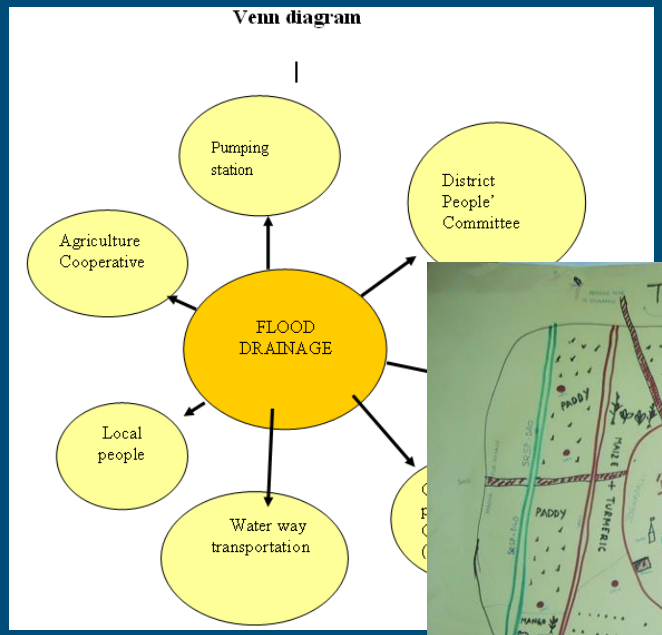
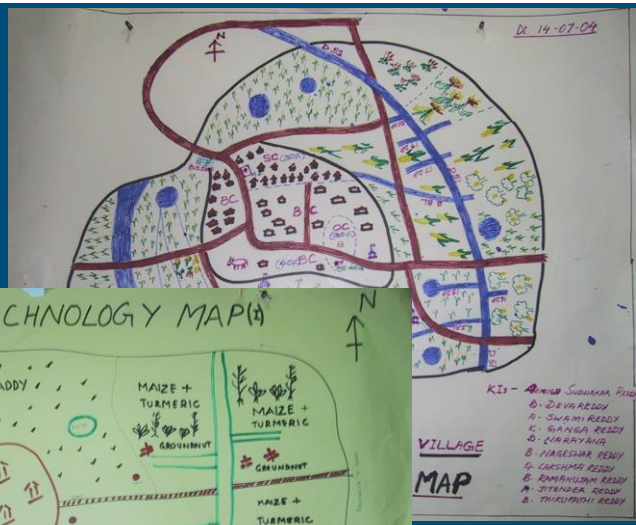
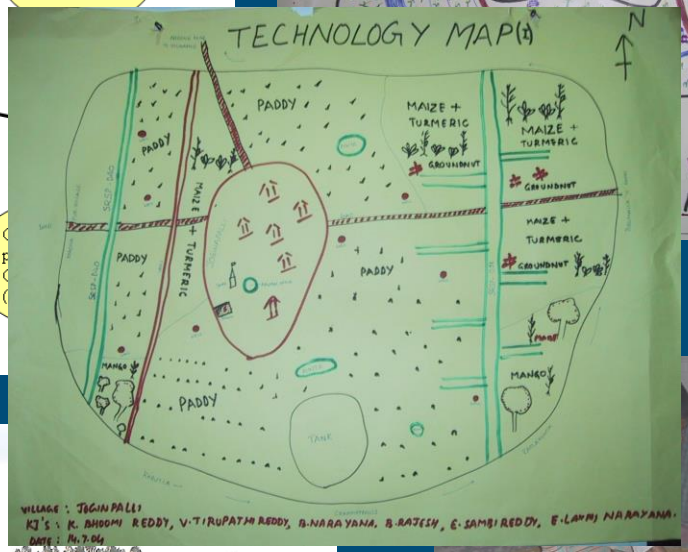
Participatory investigations

Tools:

- village profile,
- village diagram,
- cropping calendar,
- Economic classification
- at household level and
- Venn diagram







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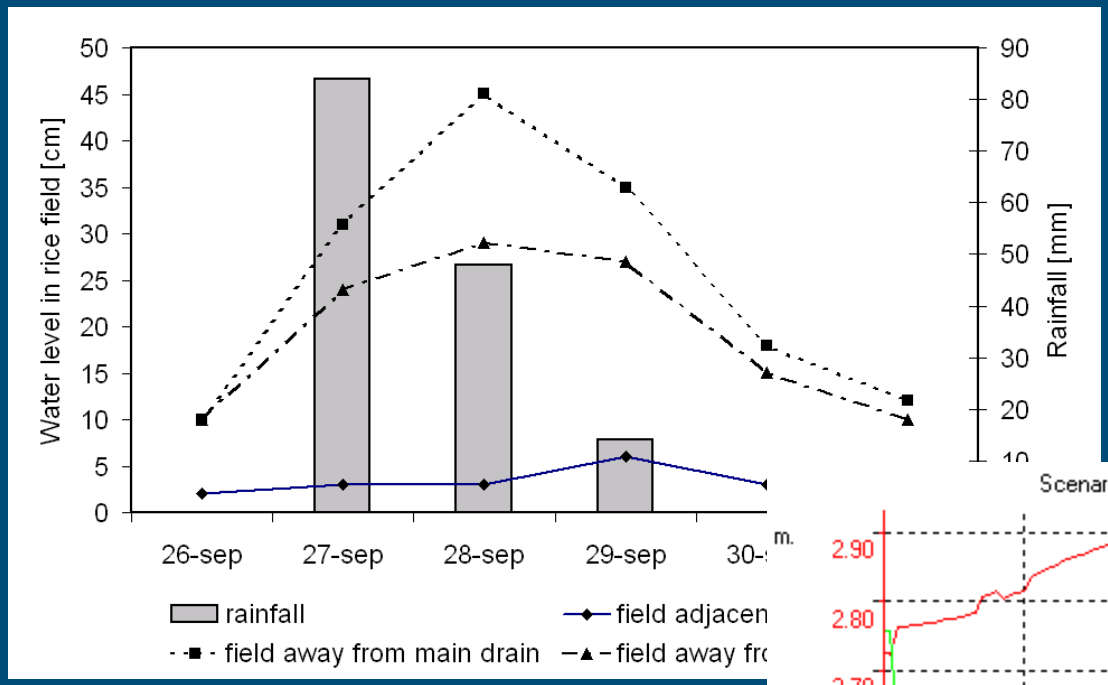
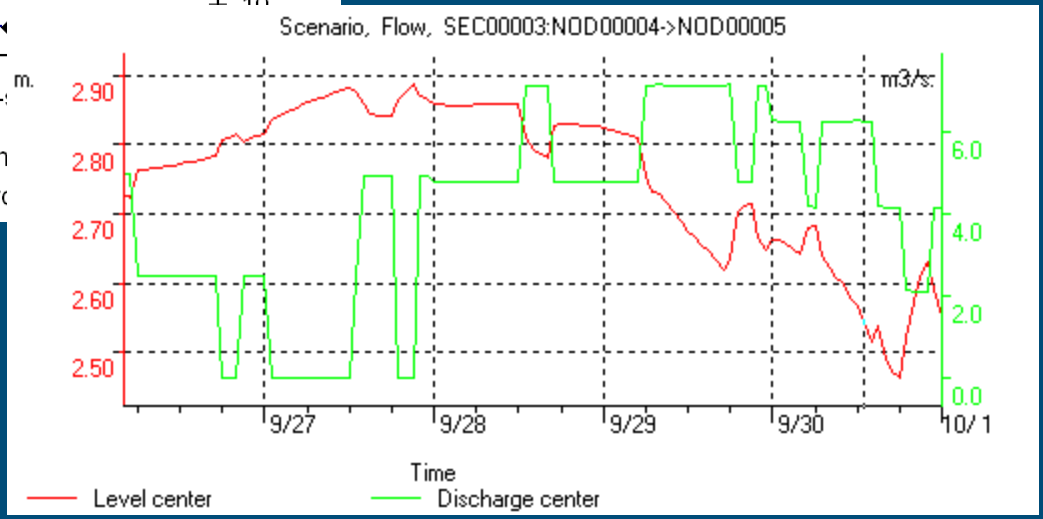
PLA Workshops to discuss modelling outcomes



← From simple to complex ↓



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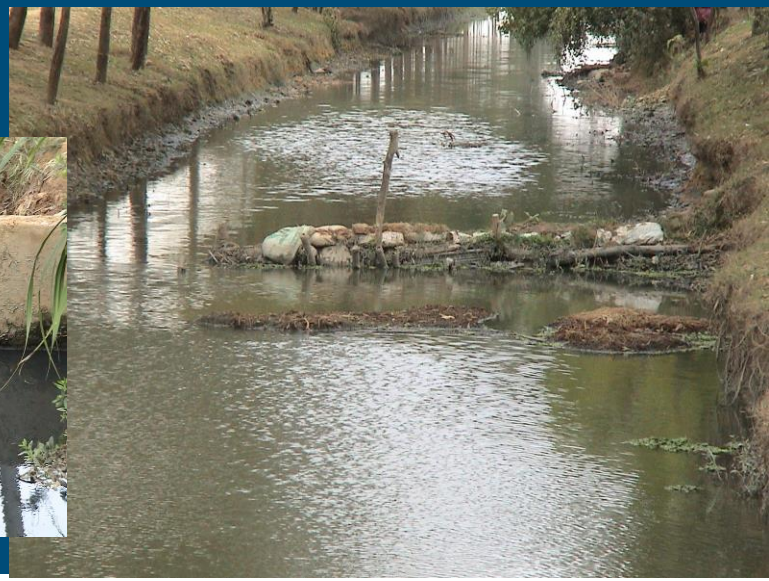
PLA Workshops to prioritize improvement options

- Trash racks: not only at pumping station but throughout the polder
- Changing land use: urbanization ➔ more stakeholders ➔ different tasks for organisations (not only farmers)
- Structures often too small and at the wrong location
- On-farm management: extension



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Outcome of the study:

- Conceptual design for improved drainage performance (both physical infrastructure as well as institutional) agreed upon by all stakeholders

- Implementation manual : method for participatory diagnostic process to identify and to quantify constraints in the functioning of drainage systems in other polders in the Red River Delta

Conclusions

- Applied research is also action research
- Applied research does not have to be objective: the ß-researcher brings in his/her knowledge to propose solutions
- Participatory research is an excellent tool for sustainable rural development
- Participatory research links tacit with explicit knowledge

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