

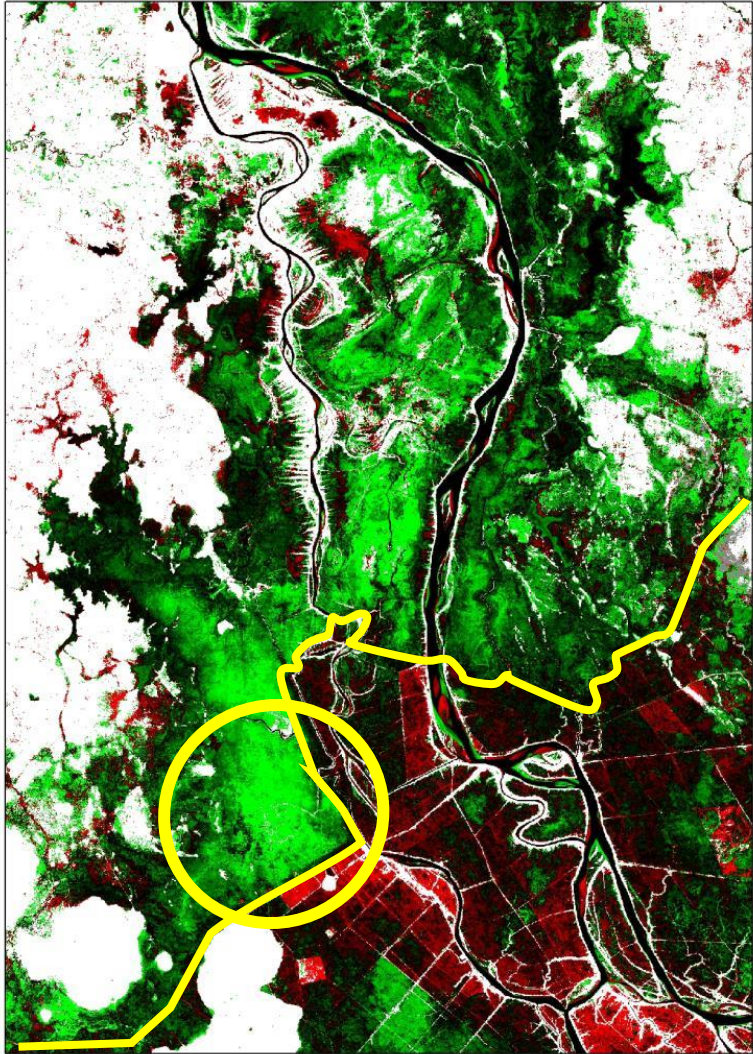


Pseudo-commons: drainage canals and irrigation pumps in Takeo province, Cambodia

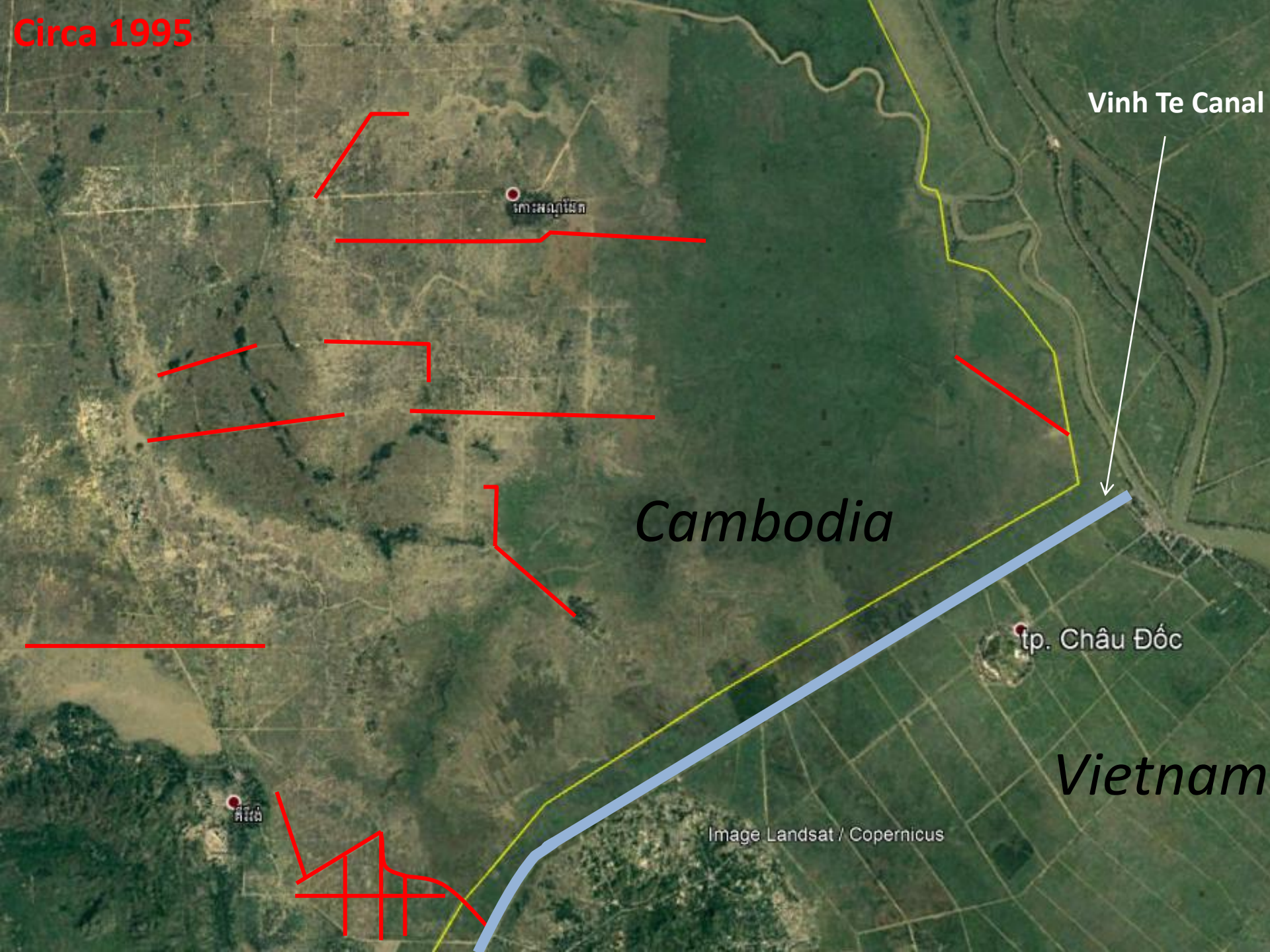


Jean-Philippe Venot (IRD/RUA), Raksmei Phoeurk (RUA),
Marie Fétiveau (AgroParisTech) and Sreytouch Heourn (RUA)
Ho Chi Minh City, 10-11 Dec, 2019

Prologue....



Circa 1995



Vinh Te Canal

ព្រះសីហនុវិហារ

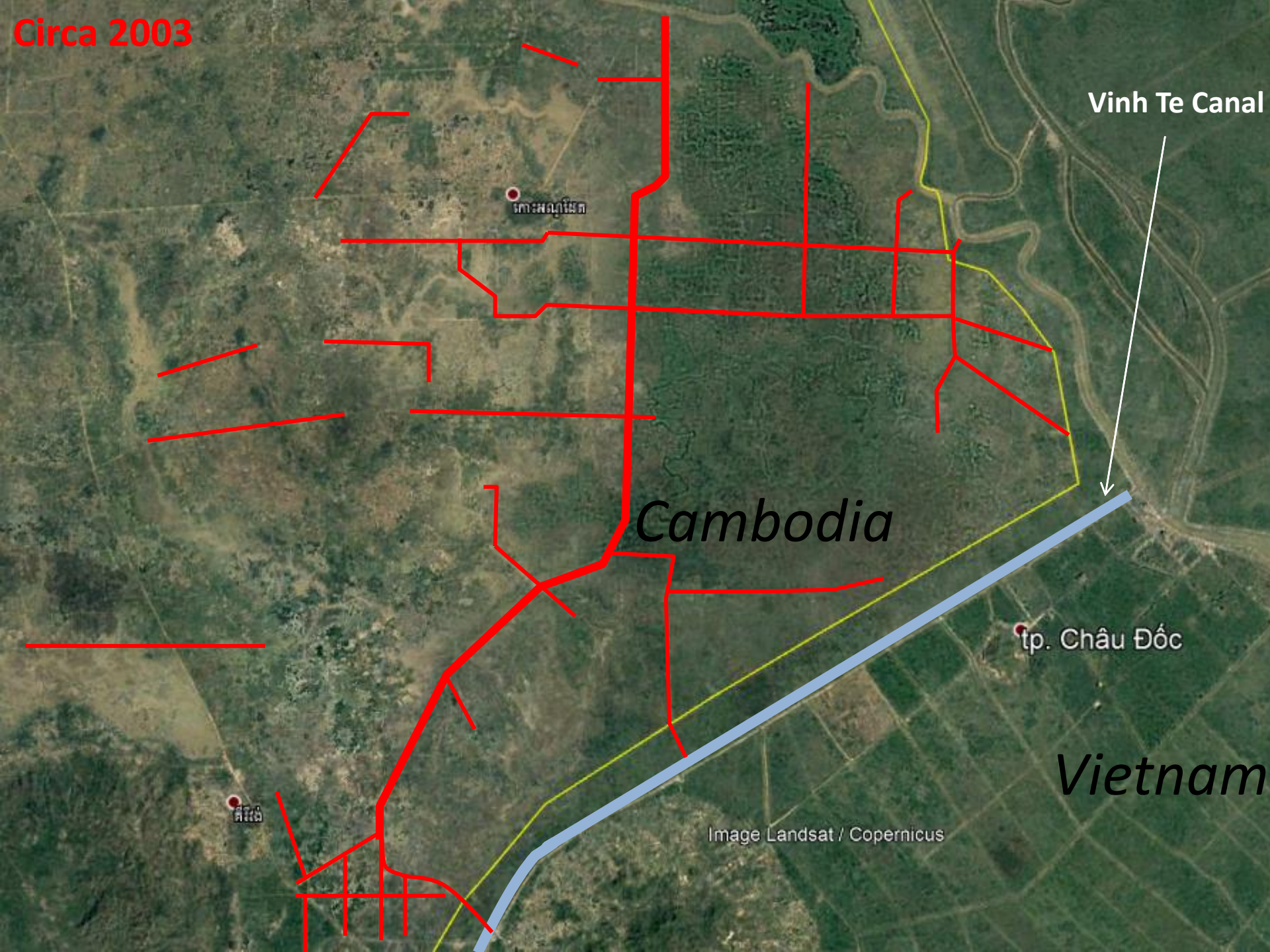
Cambodia

tp. Châu Đốc

Vietnam

Image Landsat / Copernicus

Circa 2003



Vinh Te Canal

เกาะพญาไยต์

Cambodia

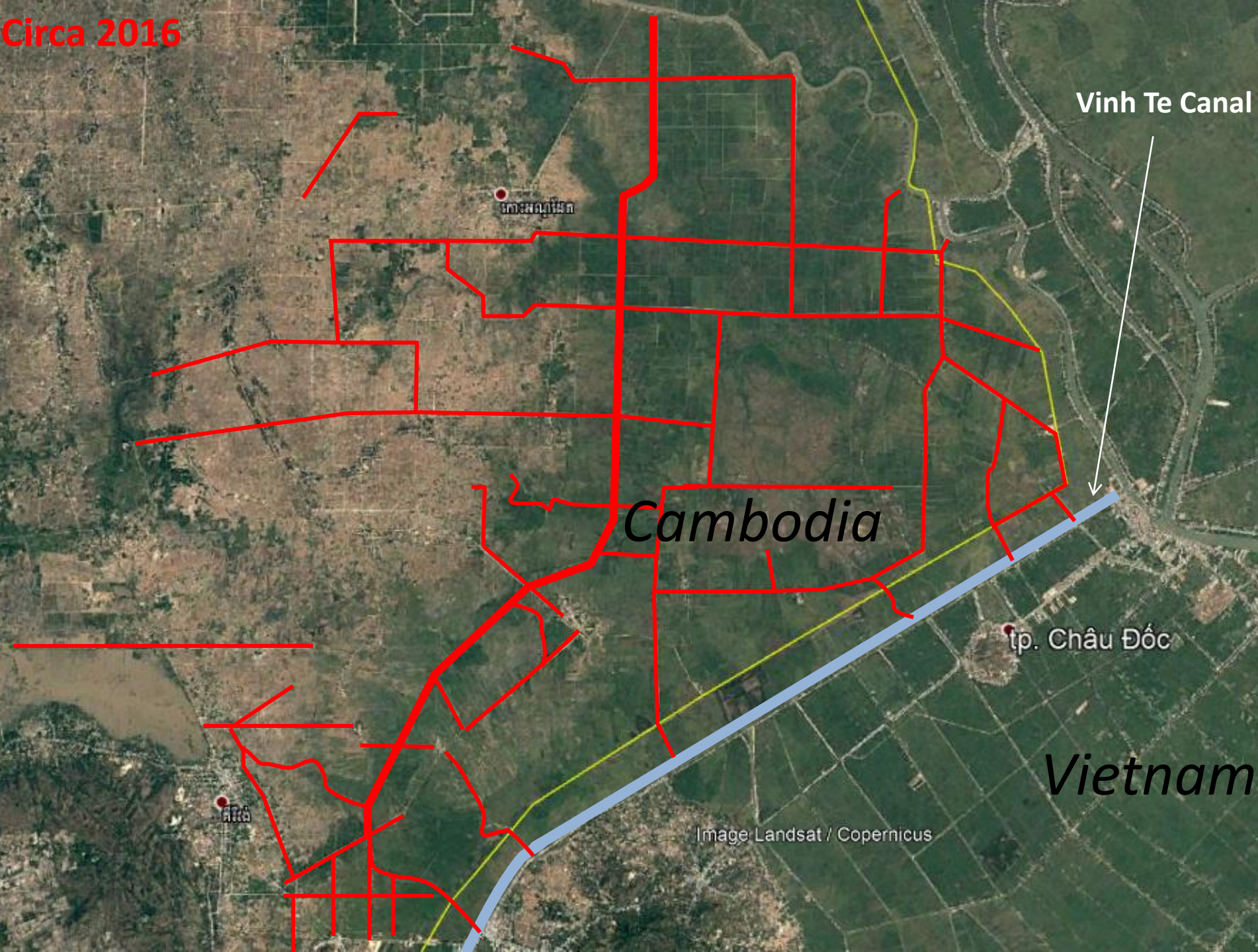
tp. Châu Đốc

Vietnam

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Image Landsat / Copernicus

Circa 2016



Vinh Te Canal

Imeang

Cambodia

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Vietnam

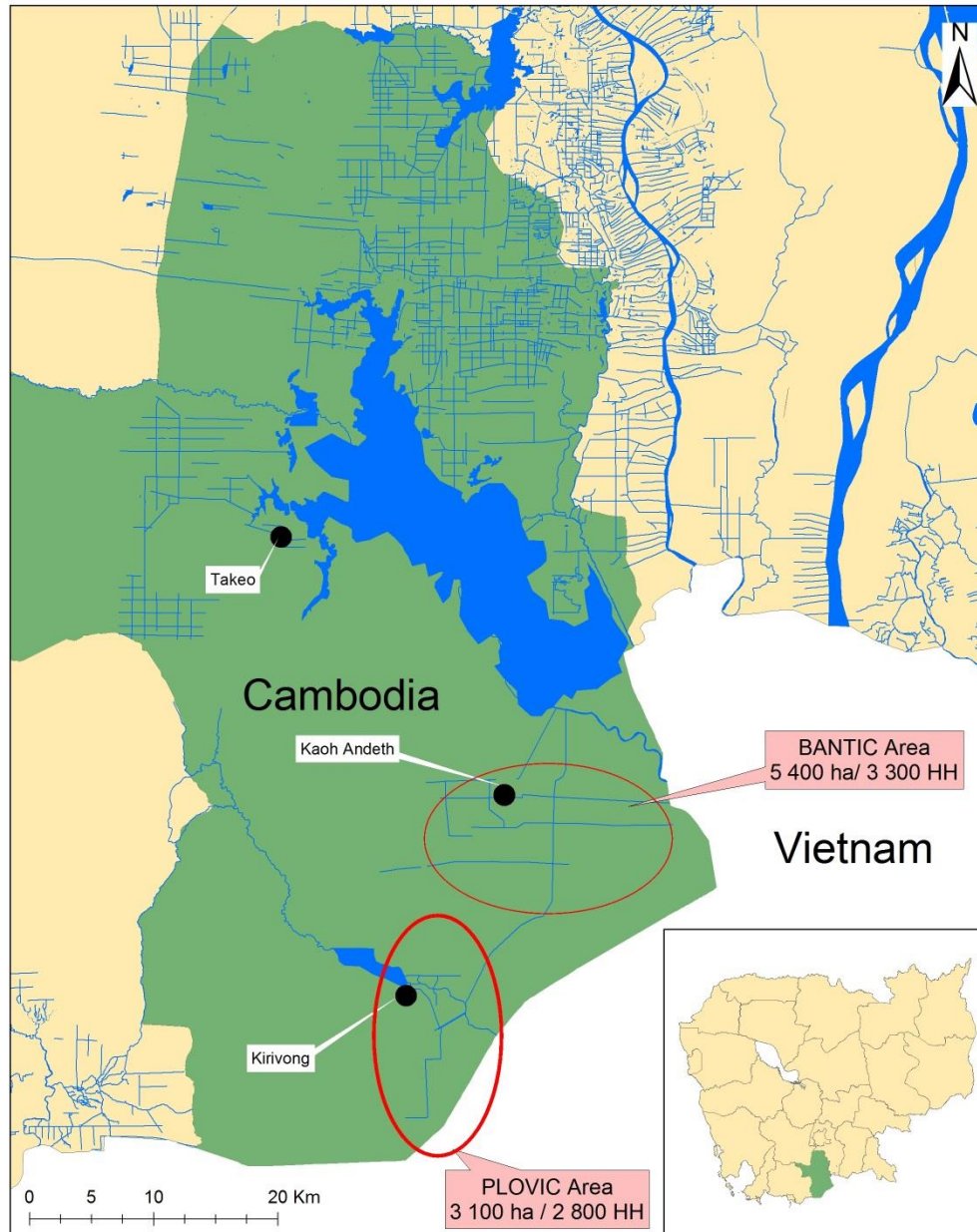
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Image Landsat / Copernicus



- Case Study Area
- Methodology
- Historical Development
- Farmer's Vulnerabilities and Rice Economics
- The National PIMD Context
- An Hybrid Water Management System
- Some Concluding Thoughts

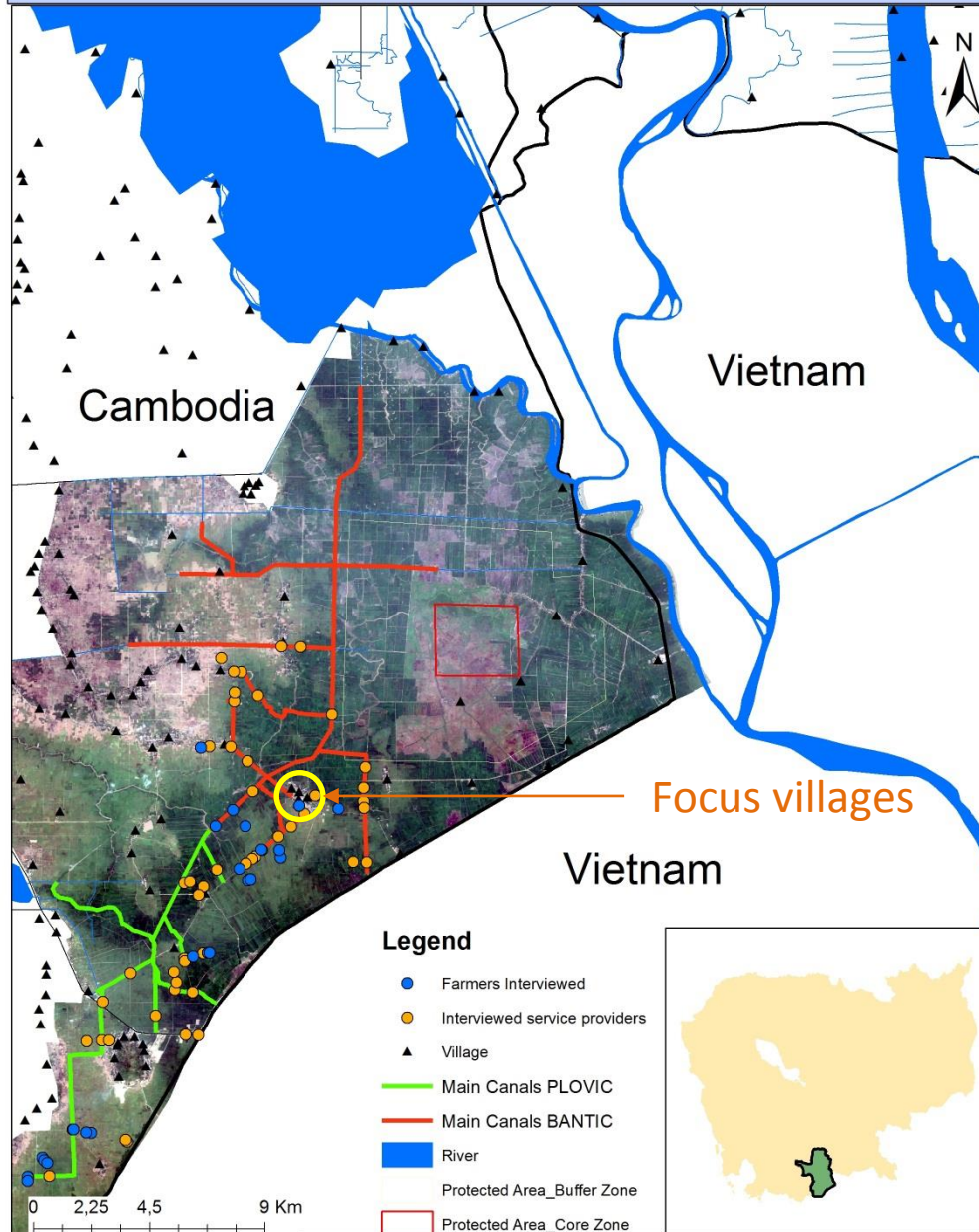
Large Irrigation and Drainage Sites in Takeo Province



Case Study Area

- South of Cambodia
- Border of Vietnam
- Large flood plains inundated between August and November
- Limited infrastructure development (compared to Vietnam)
- PRASAC project (financed by the EU) between 1998 and 2004
- CAVAC project (AusAid) between 2012 and 2017
- Prominence of large earthen drainage canals and petrol pumps
- Single or double rice cultivation
- One protected wetland

Interviews location in the PRASAC Area, Takeo-Cambodia



Methodology

Regional and Village level analysis

Mixed methods: individual interviews, Focus Group Discussions, small N quantitative questionnaires

- **Key informant interviews**
- **Staff of administration** (Ministry of Water Resources and Meteorology - MoWRAM; Ministry of Agriculture, Forestry and Fisheries - MAFF)
- **Representatives of Water User Associations (FWUC)**
- **Local Elected Representatives**
- **Private Water Sellers** (15 in BANTIC and 16 in PLOVIC) managing 55 pumping systems
- **~ 100 farmers** (80% in focus villages)

Historical development of the area

- 1914 Border between Cambodia and Vietnam drawn
- 1960s Land clearing and floating rice cultivation (participates from a policy aiming at “stabilizing” the border; Khmer living in Vietnam and in neighboring areas settle in the region)
- 1970s The area is affected by conflicts and emptied
- 1980s Re-settlement
 - Land allocation by local authorities
 - Arrival date and ownership of livestock impact farming trajectories
 - Krom Samaki (collective land clearing and agricultural work)
 - Acceleration of land clearing (government tractors)
- 1990s A late Green Revolution (introduction of short-duration rice and progressive phasing out of floating rice) linked to Vietnamese influence and unfavorable rainfall regime
- 1998-2003 EU supported PRASAC project (construction of main drainage channels) allowing the widespread dissemination of short-term rice and extension of the area under two cropping seasons

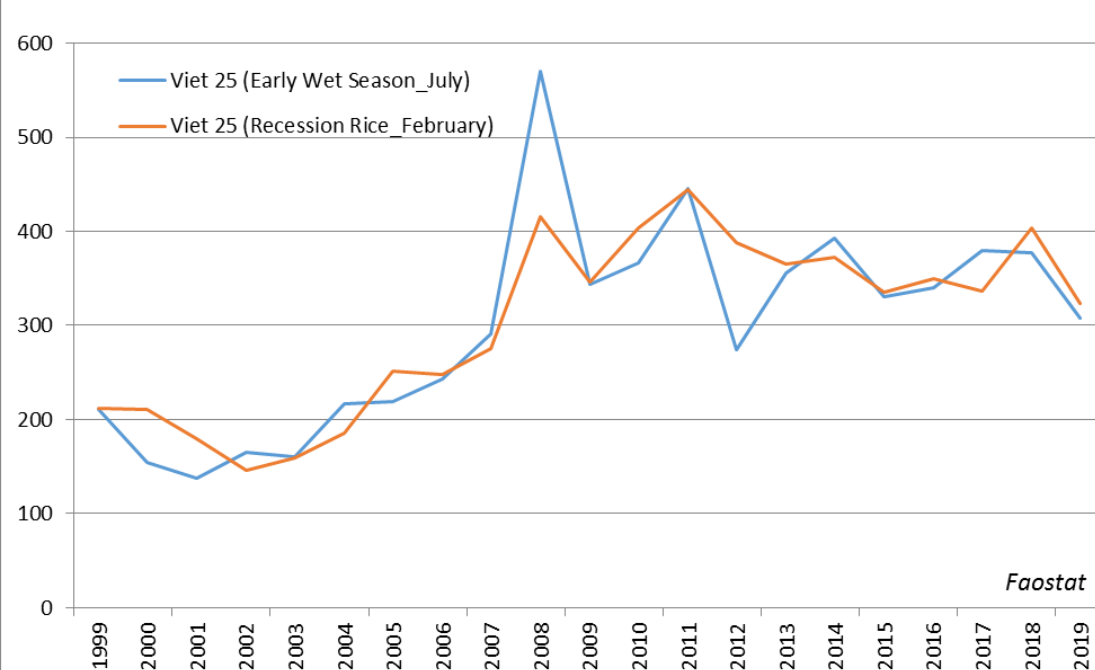
Historical development of the area

- Early 2000s Vietnamese farmers contribute to land reclamation (thanks to their equipment) under informal land rental agreement
- 2005-today Acceleration of trends
 - Growing importance of micro-credit (85% of farmers)
 - Migration of the most fragile households to the North East of the country and to Thailand and Land concentration
- 2012-2017 CAVAC project: re-excavation of major drainage channels, support to Water User Associations and renegotiation of infrastructure maintenance modalities



Vulnerabilities

Viet 25 (Export US\$/Ton)

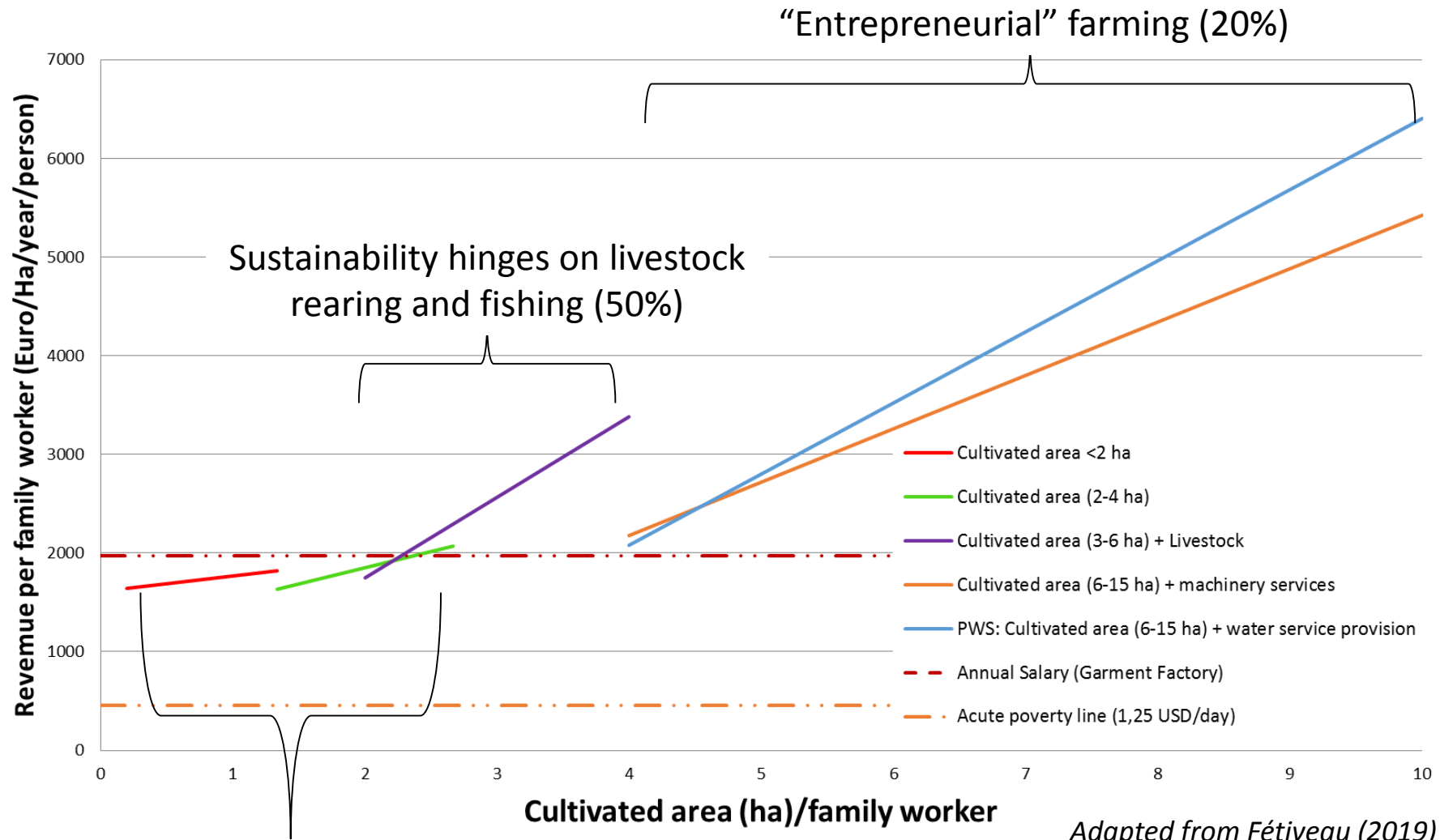


Droughts/Water Availability

*Price fluctuation
+/- 20%*



Economics of Agricultural Systems



Adapted from Fétiveau (2019)

Systems maintained thanks to
remittances, small commerce and
agricultural salary work (30%)

PIMD: The National Context

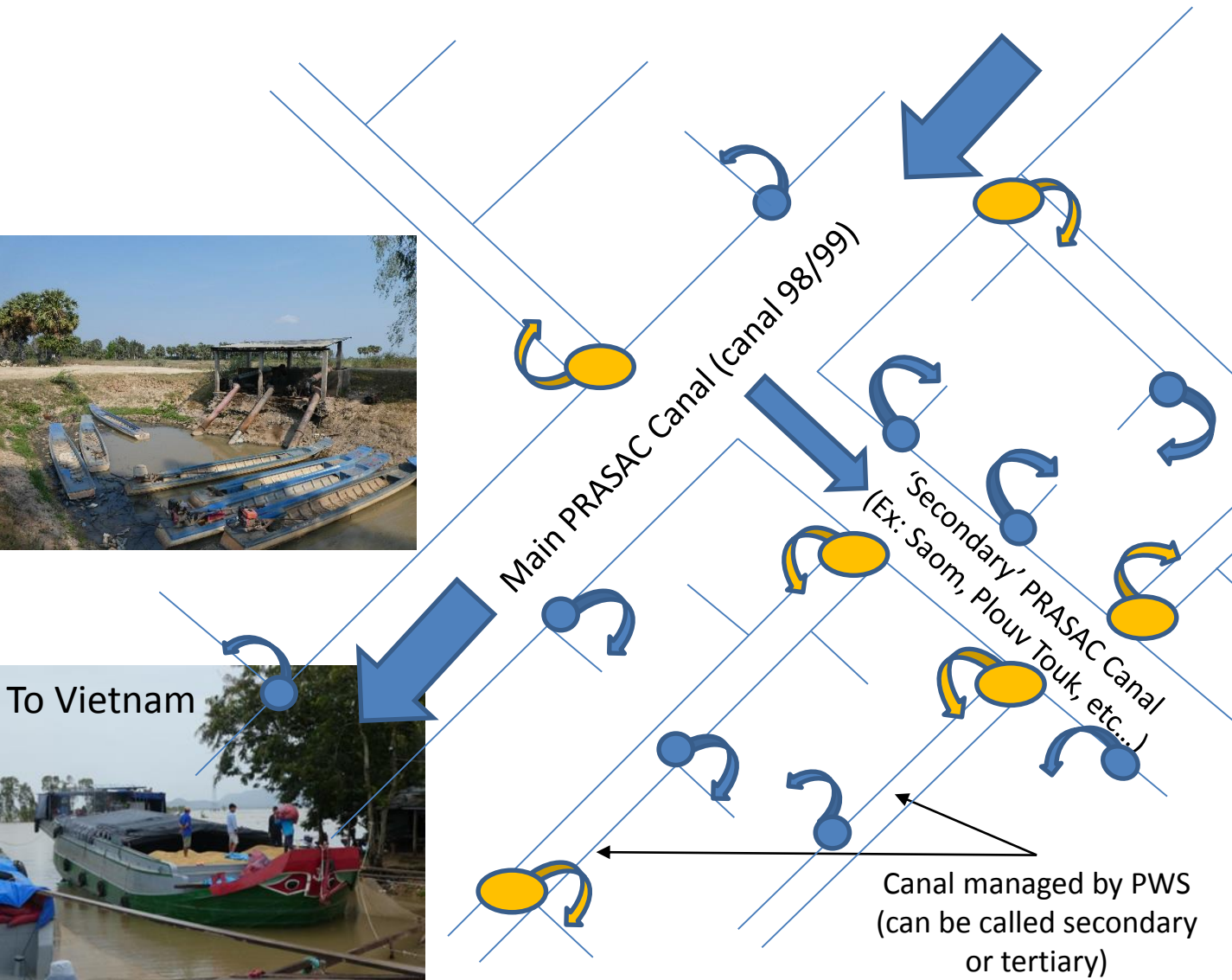
- Participatory Irrigation Management **and Development** Policy enacted in 1999 (Circulaire No. 1) and 2000 (Prakas 306) with strong support from international agencies
- Centers around the establishment of Water User Associations, called FWUC (Farmer Water User Community)
- As elsewhere in the world, FWUC are meant to assume responsibilities over operation and maintenance of secondary & tertiary infrastructure (and their financing); MoWRAM responsible for major infrastructures
- Two main approaches to implementation:
 - Government-led “blanket” approach (more than 1000 FWUC established), with a standardized process of creation and organization of FWUC mimicking an irrigation canal network.
 - “Pilots” implemented as part of projects (AFD, ADB, AusAid -a few dozens FWUC), following an adaptive approach and providing longer support to FWUC

PIMD: The National Context

- Enactment of a *FWUC decree* in 2015 only
 - Discussions had started in 2000
 - FWUC put under the authority of MoWRAM
 - No mention of responsibilities sharing or modalities of financing
- Classic shortcomings of PIM policies:
 - Reluctance of administration to devolve power/authority
 - Lack of capacity, legitimacy, accountability of FWUC
 - Unwillingness of farmers to pay Irrigation Service Fee
 - Deferred maintenance problems/long term lack of sustainability
 - Focus on new construction/heavy rehabilitation still unquestioned

Beyond “paper (policy)” ...

.... It's always more complex



« Primaire »



*Canal 98 and Derm Dong, Looking South
Sept 2017; Feb 2018; March 2019*

« Secondaire »



« Tertiaire »

Sept 2017



Feb 2018



April 2017



A hybrid triptych rather than a diptych

MoWRAM

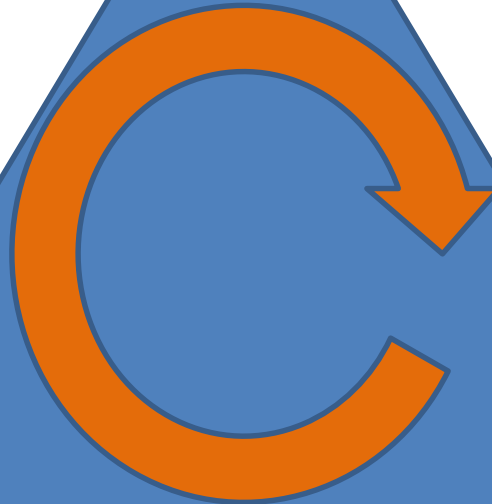


FWUC

COMMUNES



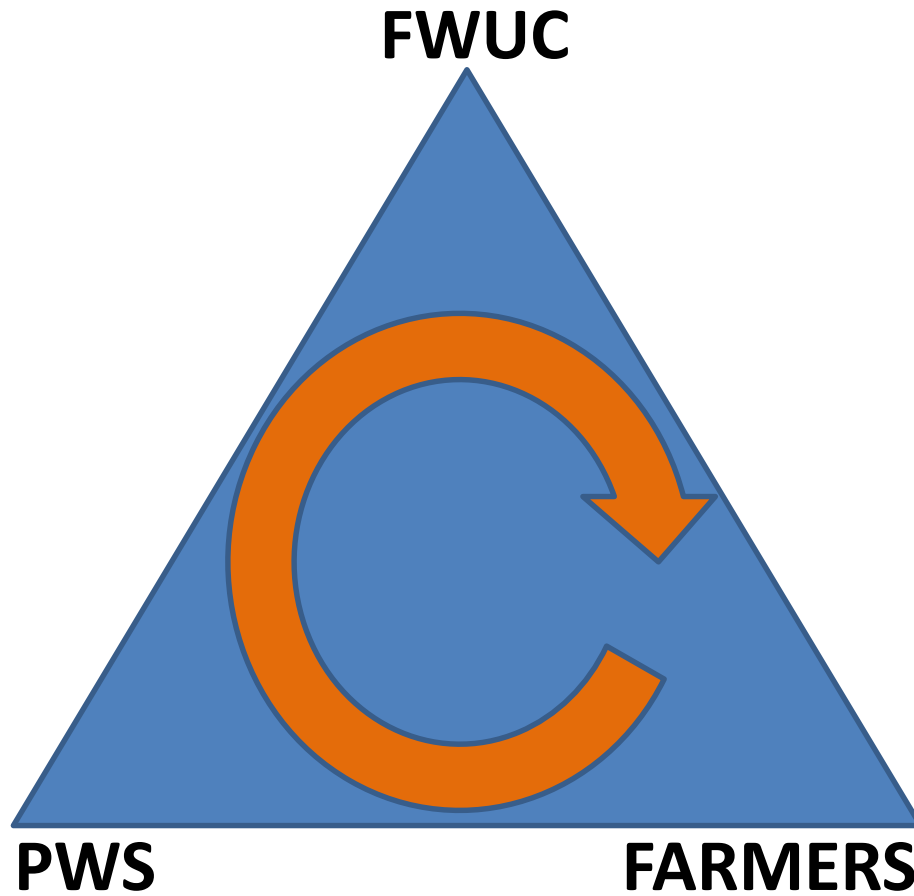
PWS



FARMERS

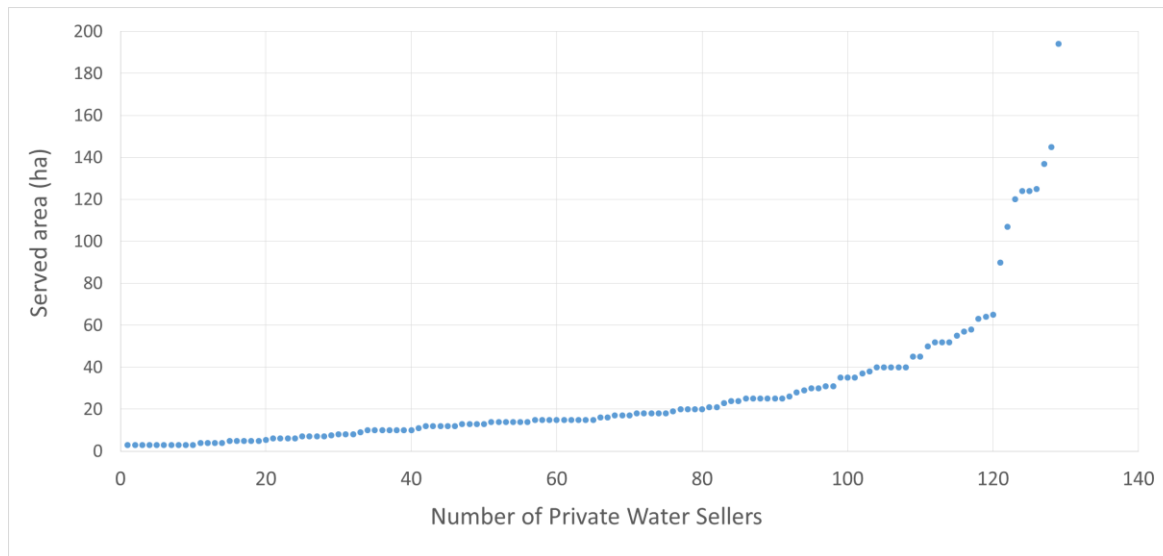
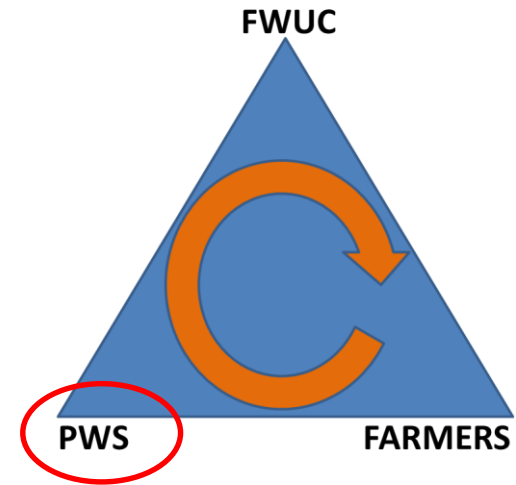


A hybrid triptych rather than a diptych



A hybrid triptych rather than a diptych

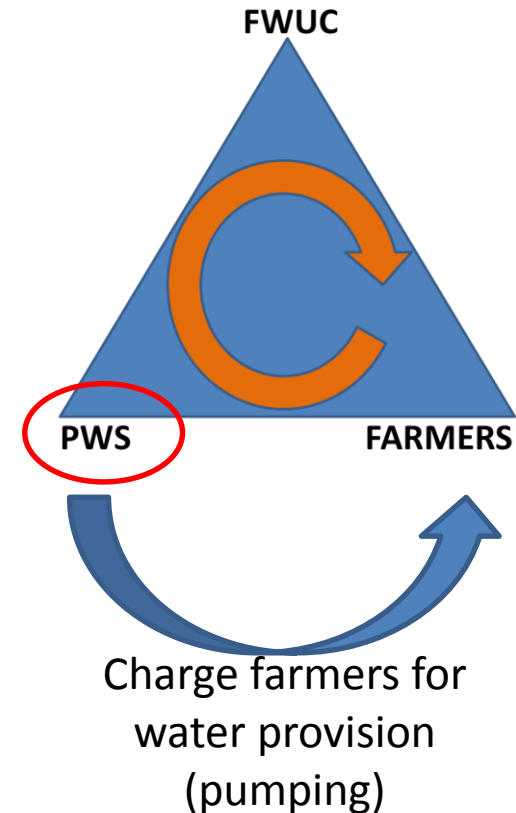
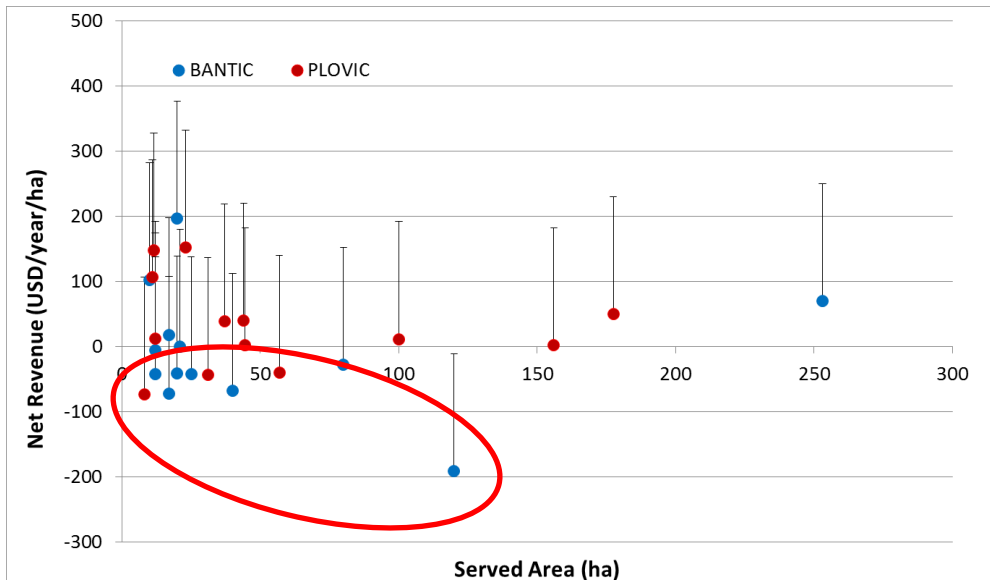
- Some PWS started operating in the early to mid 1990s
- PWS accessed water from natural lakes, reservoirs and Vietnam then drainage canals
- Often well connected to local authorities and administration
- Preferential access to land and other means of production
- More than half the PWS have purchased land since they started their business
- Own 10 hectares on average
- Provide water to 60 hectares





A hybrid triptych rather than a diptych

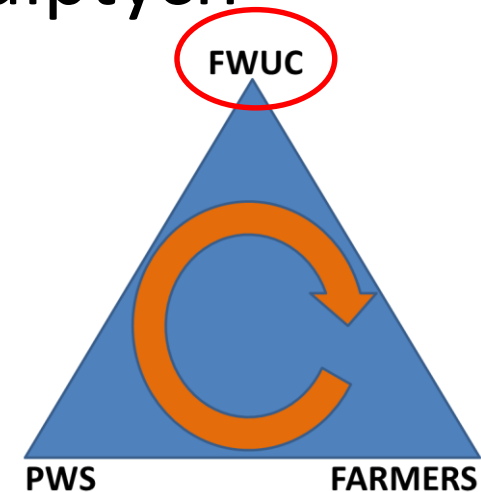
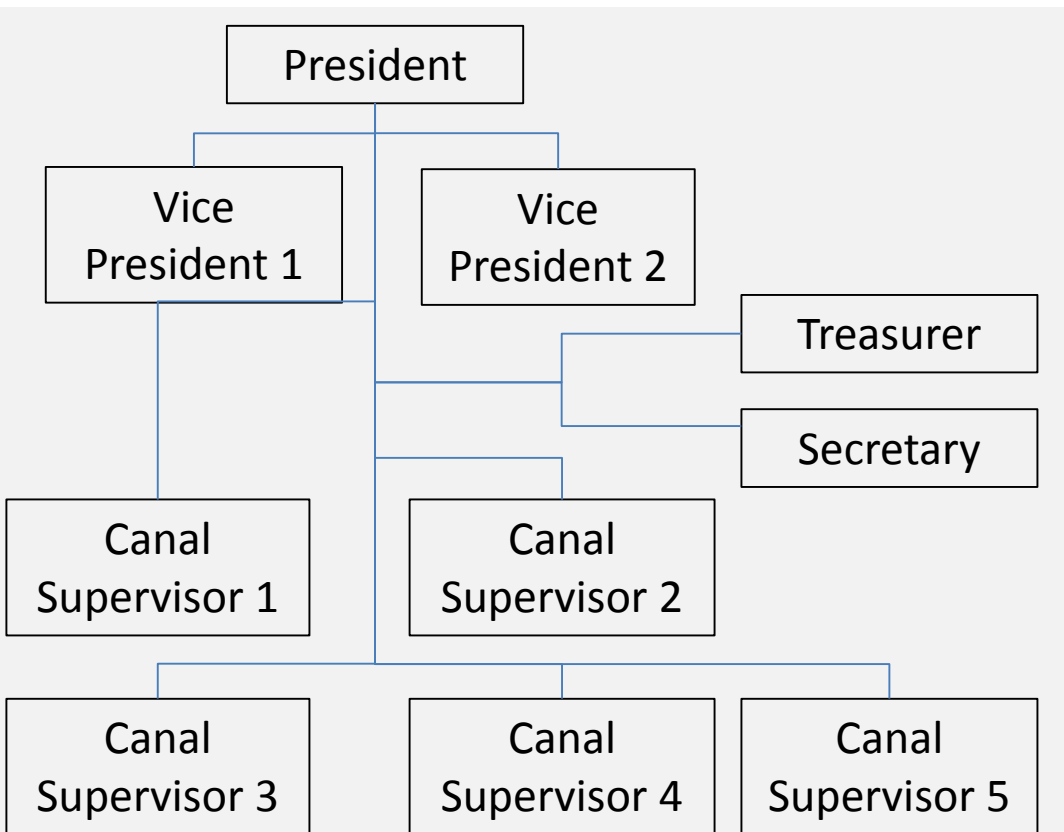
- Pumping fee BANTIC: 125 USD/ha/season
- Pumping fee PLOVIC: 165 USD/ha/season
 - ➔ 20 to 25% of production cost
 - ➔ 15% of gross rice revenue
- Average operating cost of 140 USD/ha/year
- 55% of all cost are petrol cost
- Cost distribution high if served area <50 ha
- Economy of scale if area served > 50 ha



The business of selling water is not always profitable per se (low recovery rate)
but relative gain in rice productivity is high (+180 USD/ha)

A hybrid triptych rather than a diptych

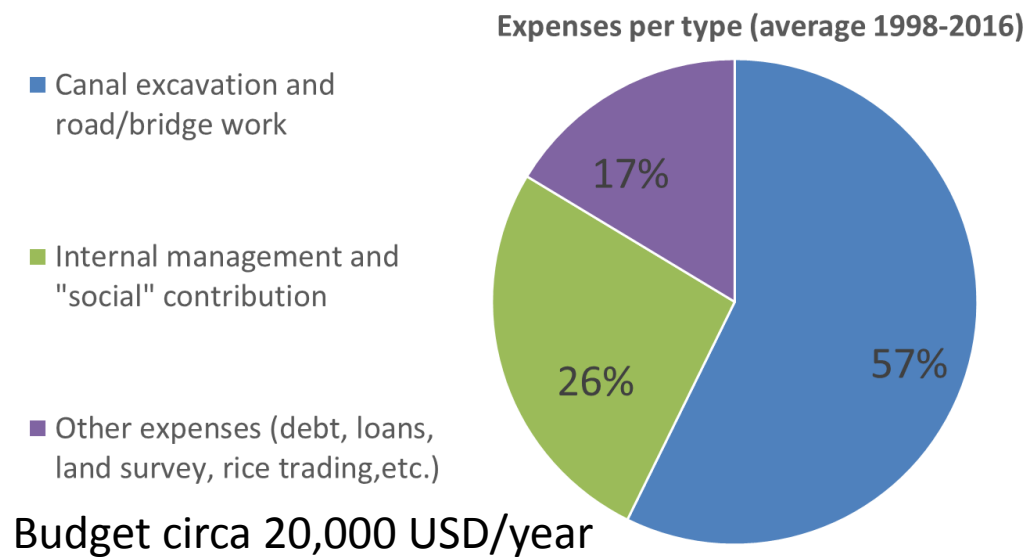
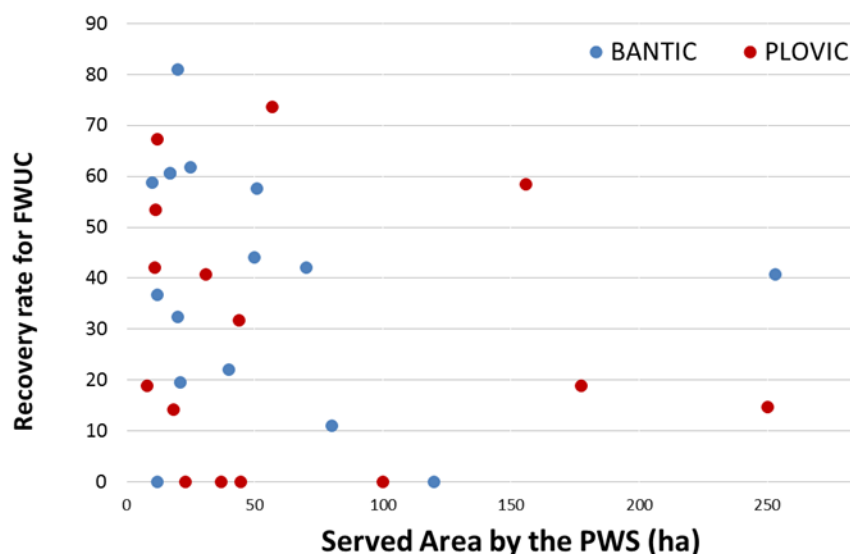
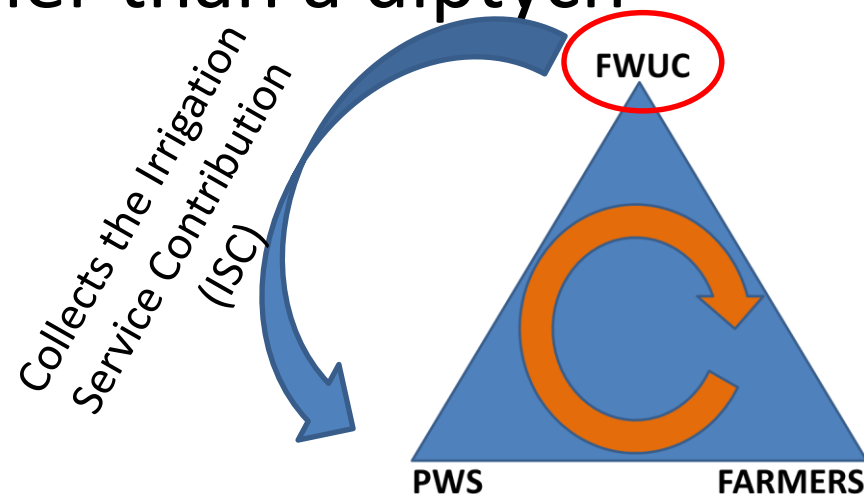
- Established in the late 1990s (PRASAC project)
- Hierarchical structure as envisioned by the legal framework, limited to the “committee”
- Meeting with PWS to discuss accounts every year



- Serves as a relay with administration (MoWRAM)
- Political interference of elected commune representative is high
- Given the nature of the canal network, what is the role of the FWUC (squeezed between MoWRAM and PWS)?

A hybrid triptych rather than a diptych

- In BANTIC, ISC Rate of
 - 17 USD/ha/year
 - 7% of pumping fee
- In PLOVIC, ISC Rate of
 - 30 USD/ha/year
 - 9 % of pumping fee
- ISC nominal fee is much higher than O&M cost
- Recovery rate of 30 to 40%; covers 80% O&M cost
- Challenge:** Area unaccounted for (PWS-owned area; exemption of farmers who provided land)



Conclusion

- Studying irrigation governance modalities requires understanding underlying agricultural systems and their dynamics
- In a context where agricultural systems are embedded in international commodity chains, there is a strong economic dimension to water governance
- Irrigation Governance in Takeo has two main characteristics:
 - **Pseudo Commons:** « structure » that invokes the notion of « commons » but display few features of such mode of management
 - **Hybrid character/Bricolage :** Public and Private?
- A privatization in the making?
 - Relative “absence” of involvement of the administration (MoWRAM) except in the context of development projects (PRASAC, CAVAC).
 - The (political) state is however very much present (& closely linked to administration
 - In the absence of regulation, the situation is driven by PWS practices
 - Due to vulnerability of agricultural systems, processes of land concentration to the benefit of PWS-cum-entrepreneurial farmers are at play

Change in flood patterns in the PRASAC Area, Takeo-Cambodge

