STI for SCP
วิทยาศาสตร์เทคโนโลยีและนวัตกรรม เพื่อการผลิตและบริโภคที่ยั่งยืน

ชล บุนนาค
โครงการประสานงานการวิจัยเพื่อสนับสนุนการพัฒนาที่ยั่งยืน
(SDG Move)

Outline

- Multi-facets of Sustainable Development Goals
- SCP = SDG12 ? (SDG Interlinkage)
- STI for SDG: Scientific excellence is not enough
- Knowledge Co-production: Addressing Science-Policy Gap
- Some interesting points from IATT Background Paper, STI for SDGs Roadmap.

Multi-facets of Sustainable Development Goals (SDGs)

Structure of the SDGs

- 17 Goals
  - 169 targets
    - 244 indicators

Multi-facets of Sustainable Development Goals (SDGs)

- การพัฒนาที่ครอบคลุม (Inclusive Development)
- การพัฒนาที่เป็นสากล (Universal Development)
- การพัฒนาอย่างบูรณาการ (Integrated Development)
- การพัฒนาที่เน้นระดับท้องถิ่น (Locally–focused Development)
- การพัฒนาที่ขับเคลื่อนโดยเทคโนโลยี (Technology–driven Development)

Major Groups of Stakeholders

ภาคธุรกิจและอุตสาหกรรม

เด็กและเยาวชน

เกษตรกรรม

กลุ่มชาติพันธุ์

องค์กรปกครองส่วนท้องถิ่น

NGOs (องค์กรพัฒนาเอกชน)

นักวิชาการ นักวิทยาศาสตร์ เทคโนโลยี

กลุ่มผู้หญิงและเด็กหญิง

แรงงานและสหภาพแรงงาน

Multi-facets of Sustainable Development Goals (SDGs)

หลักการเบื้องหลัง SDGs

- การพัฒนาที่ครอบคลุม (Inclusive Development)
- การพัฒนาที่เป็นสากล (Universal Development)
- การพัฒนาอย่างบูรณาการ (Integrated Development)
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SCP = SDG 12?


12 RESPONSIBLE CONSUMPTION AND PRODUCTION
2 ZERO HUNGER
4 QUALITY EDUCATION
1 NO POVERTY
6 CLEAN WATER AND SANITATION
3 GOOD HEALTH AND WELL-BEING
17 PARTNERSHIPS FOR THE GOALS
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
5 GENDER EQUALITY
13 CLIMATE ACTION
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
8 DECENT WORK AND ECONOMIC GROWTH
7 AFFORDABLE AND CLEAN ENERGY
14 LIFE BELOW WATER
11 SUSTAINABLE CITIES AND COMMUNITIES
15 LIFE ON LAND
10 REDUCED INEQUALITIES

STI for SDGs: Scientific Excellence is not enough.

- Inclusiveness:
  - Participation of stakeholders in the design the STI plan and policies.
  - Participatory assessment of potential impacts of technologies.

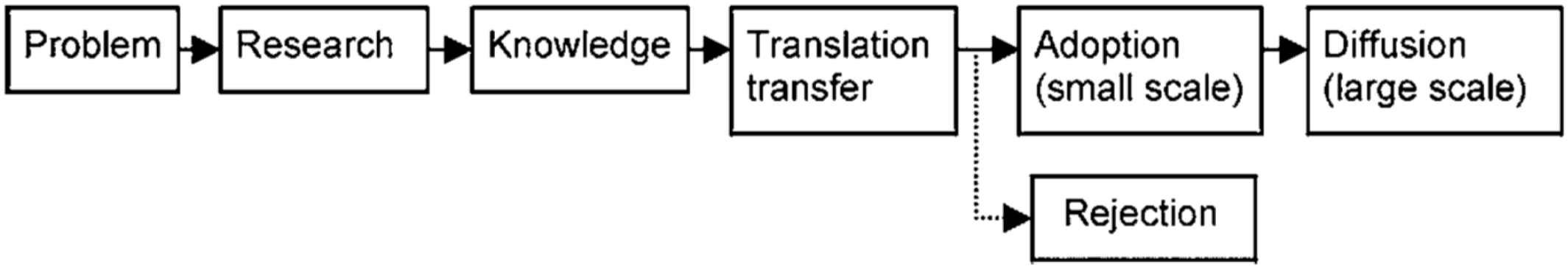
- Integration:
  - Assessing potential impacts on other SDGs
  - Resolving trade-offs and maximizing synergies
  - Knowledge co-production to solve complex problems and close science-policy gap.

IATT 2018. Science, *Technology and Innovation for SDGs Roadmaps*, IATT Background Paper. June.

Many types of "knowledge"

- **Knowledge**: "A justifiable belief" (van Kerkhoff and Lebel, 2006)
  - What types of knowledge are there?
- **"Scientific knowledge"**: Justifiable according to the standard set by adherence to accepted scientific practice and peer review
- **"Local knowledge"**: justifiable according to claims of connection with a particular place.
- **"Practical knowledge"**: justifiable on the basis of experience in practice (e.g. an electrician)
- **"Political knowledge"**: justifiable according to experience within the political process.

Conventional approach: Trickle down, transfer and translate



Source: van Kerkhoff and Lebel 2006

Different Level of Knowledge Co-Production

Source: van Kerkhoff and Lebel 2006

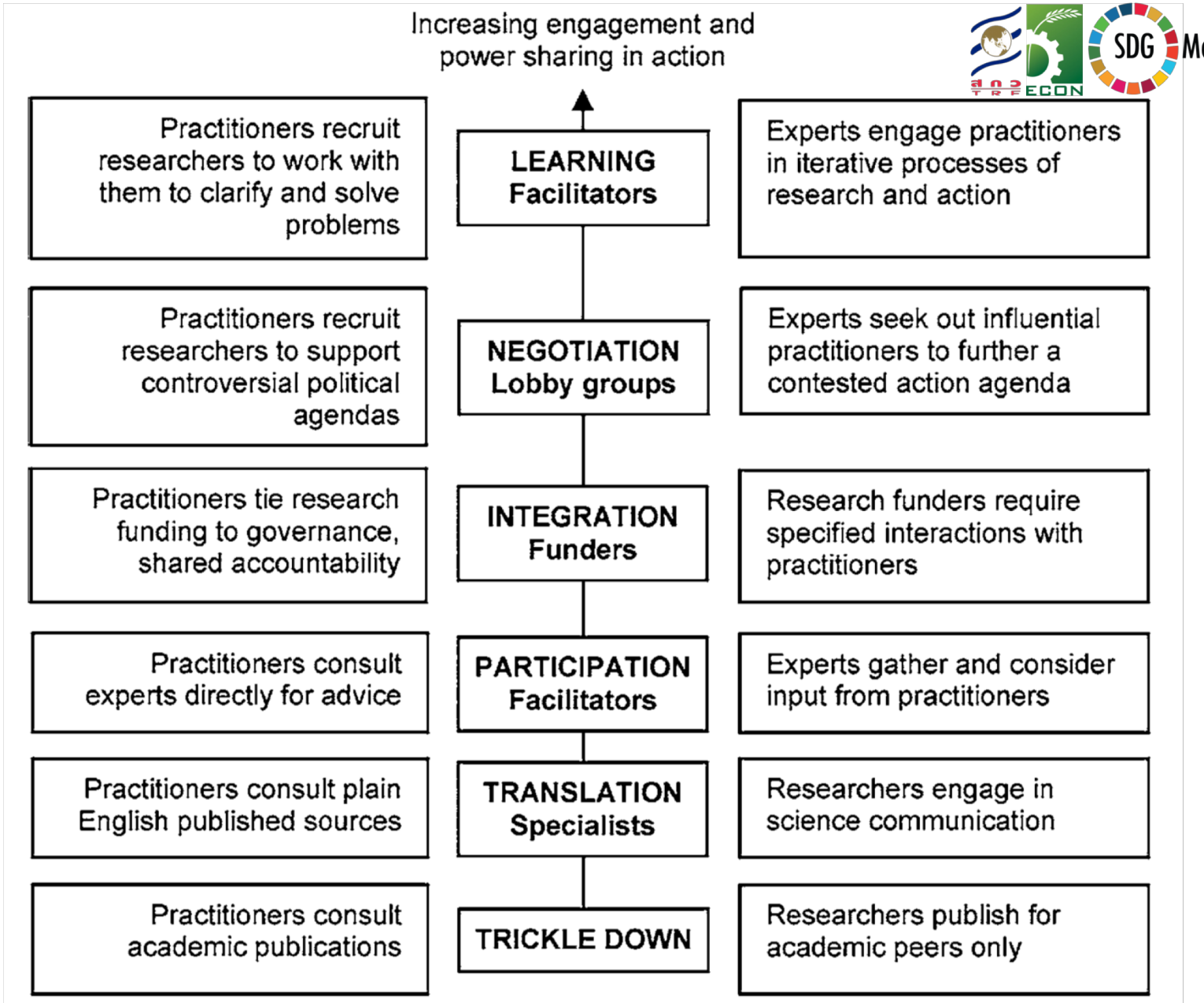
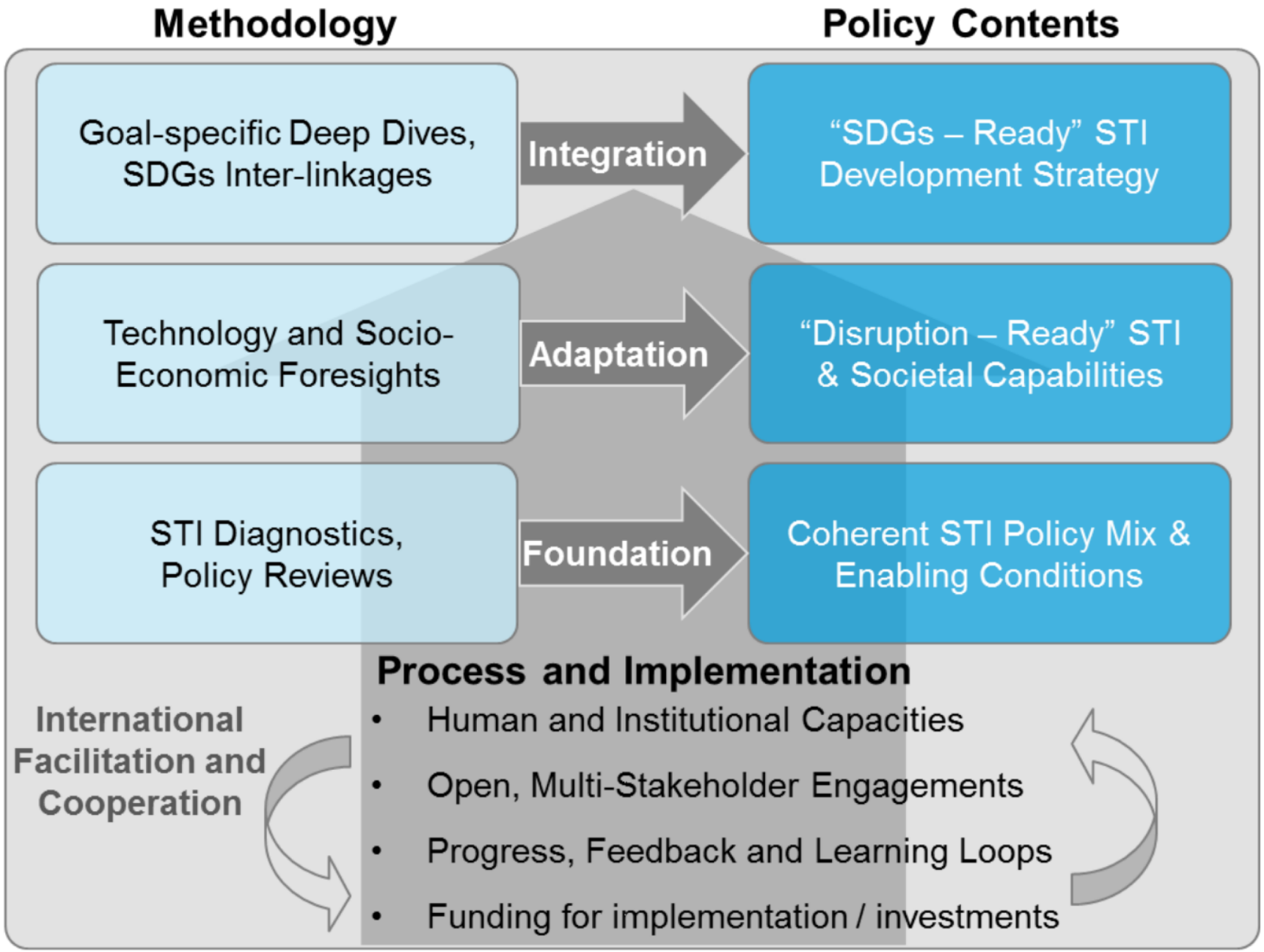


Figure 3 Knowledge, power, engagement, and action.

Organizing Framework of STI Roadmap elements and approaches

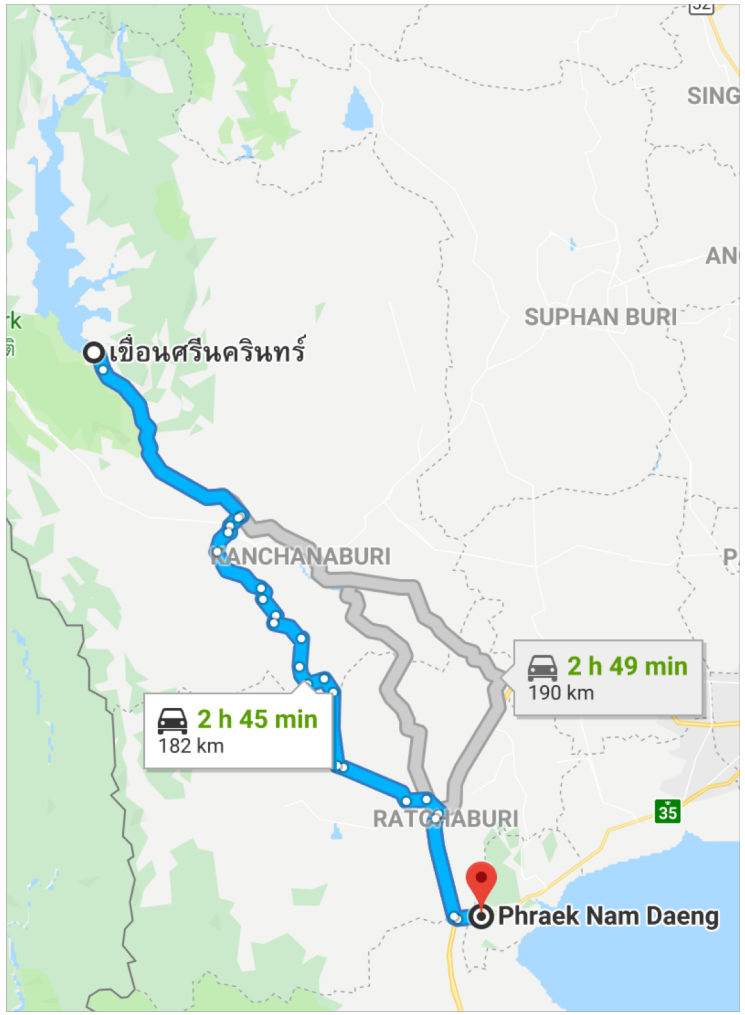


IATT 2018. Science, *Technology and Innovation for SDGs Roadmaps*, IATT Background Paper. June.

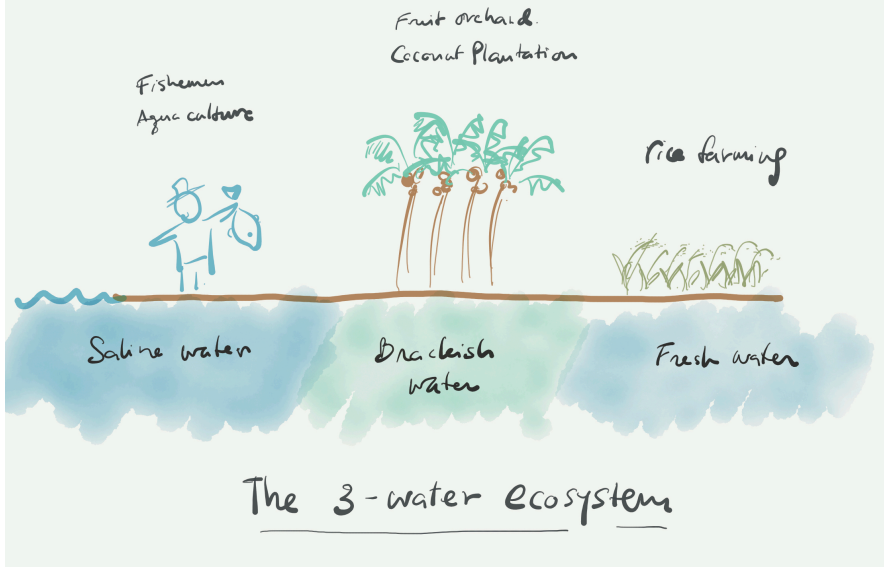
Annex 1: Case Study of Knowledge Co-production

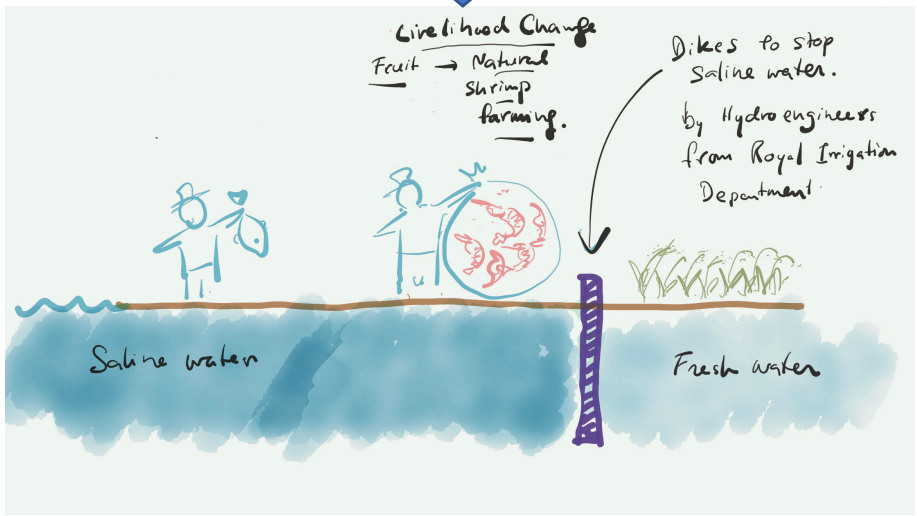
Community-Based Research: Thailand Research Fund (TRF)

- Community-based research (CBR)
  - Research question created by communities
  - Emphasize on participation of all actors
  - Clear implementation
  - Researcher as Facilitator
- Catalyzing change by research
- Example: Water management problem in Praek Nham Daeng district, Samut Songkram, Thailand

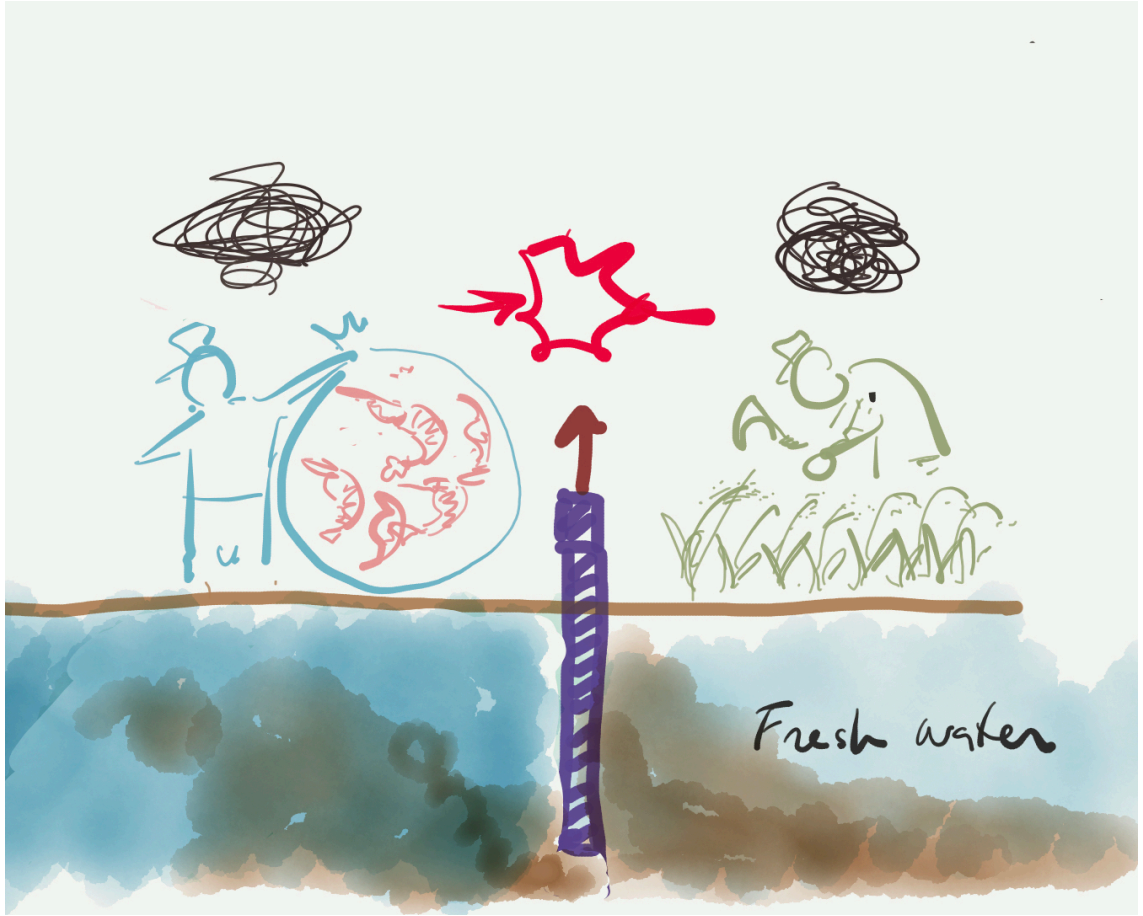


- Construction of Sri Nakarin Dam during 1978 – 1981 disrupted the local water system. Fresh water was insufficiently released to push saline water.
- Collapse of coconut plantation. Rice farmers were at risk.
- The farmers requested assistance from Royal Irrigation Department to build water gates/dikes to prevent saline water from pushing up inland.





Conflicts between communities

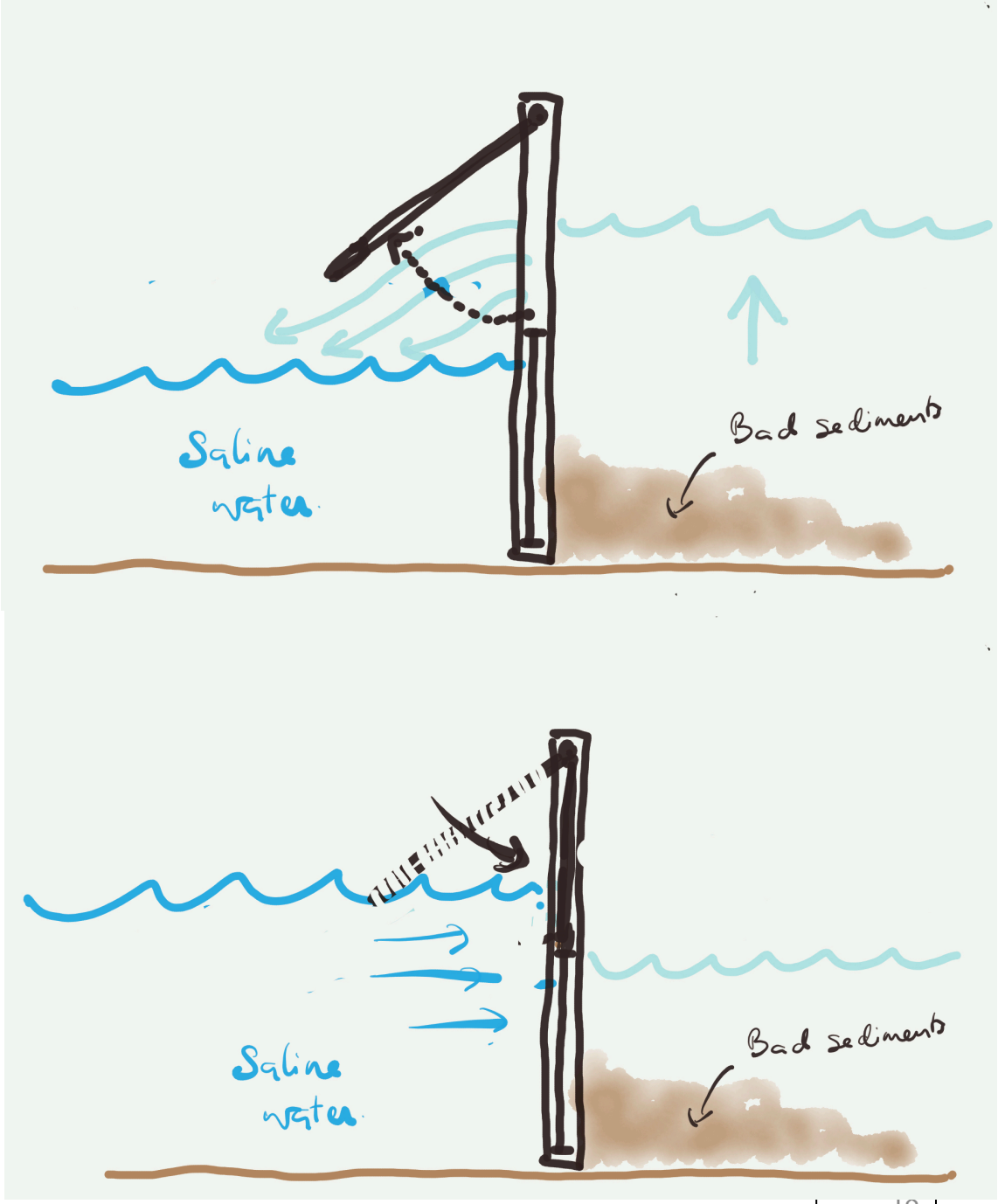


- The dikes stop water flow
  - -> Bad quality water + Polluted water from agriculture
  - Areas above the dikes were at risk of flooding
- Salt water people – Please don't open the gate, because the polluted water hurt our shrimp farming and aquaculture.
- Fresh water people – Please open the gate. When rain comes, water will flood our farms.
- This is 20+ years of conflicts.

Solutions from multiple types of knowledge

- Villagers applied for CBR funding from TRF, working with researchers from TRF.
- It took 1 ½ years to come up with workable research question. Another year to build trust among the conflict parties.
- The villagers designed the new kind of water gate, based on their local wisdom and practical knowledge.
- It took a lot of effort and political knowledge to make Royal Irrigation Department accept the design and change it.

Solutions from knowledge co-production



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