Complex Rice Systems; Putting Ecosystem Restoration into Practice

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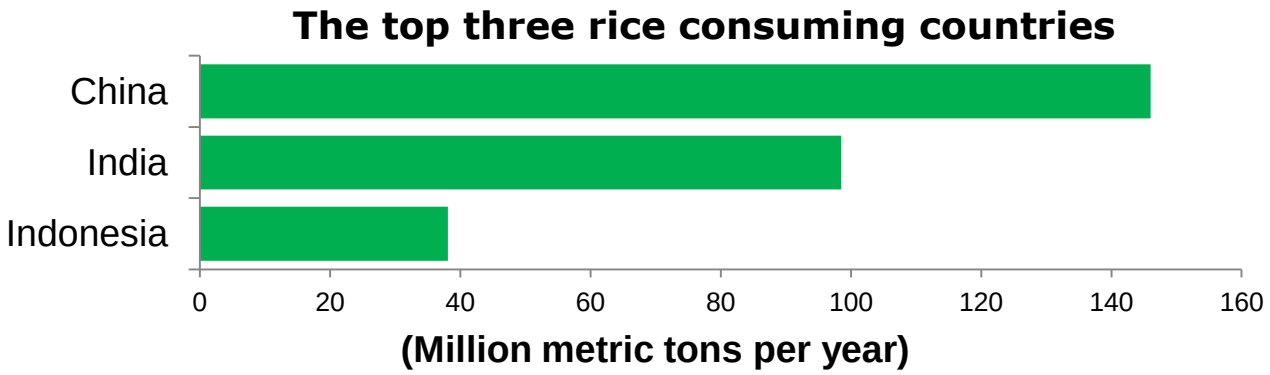
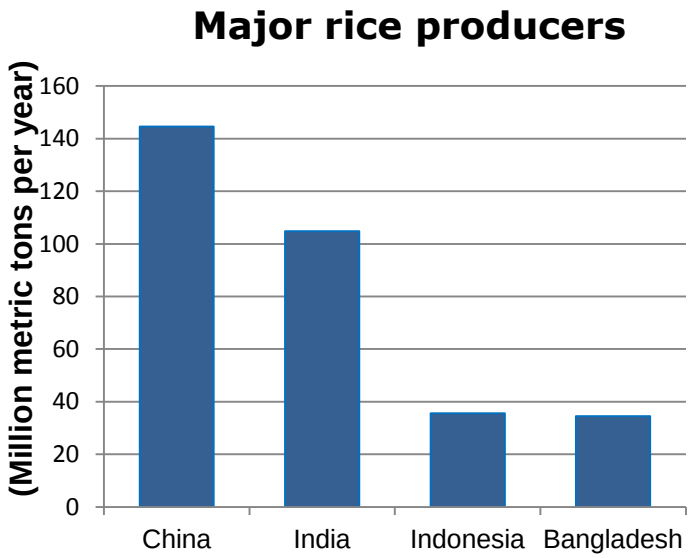
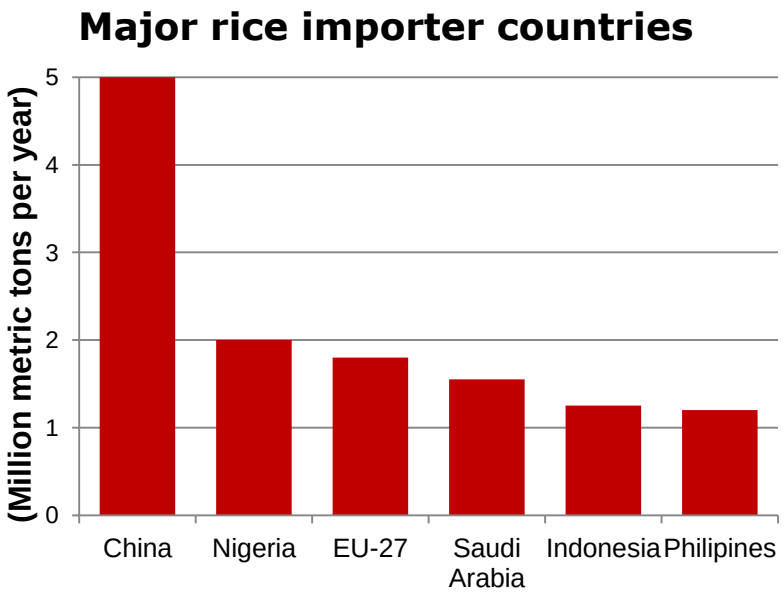
Outline

- Global rice production and the importance of ecosystem function restoration
- CRS project to restore ecosystem functions in rice production systems
- Challenge at mainstreaming CRS, solution and recommendation

Indonesian rice position







(FAO, 2016)

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Rice ecosystems

Upland
to
lowland

Rainfed
to
irrigated

Deepwater
to
marsh tidal

http://asiamonsun.blogspot.nl/

http://budidayatanamanpadisawah.blogspot.nl/2016/01/teknik-pengelolaan-padi-sawah-pada.html

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Green revolution on rice

Great benefit at early development, BUT later

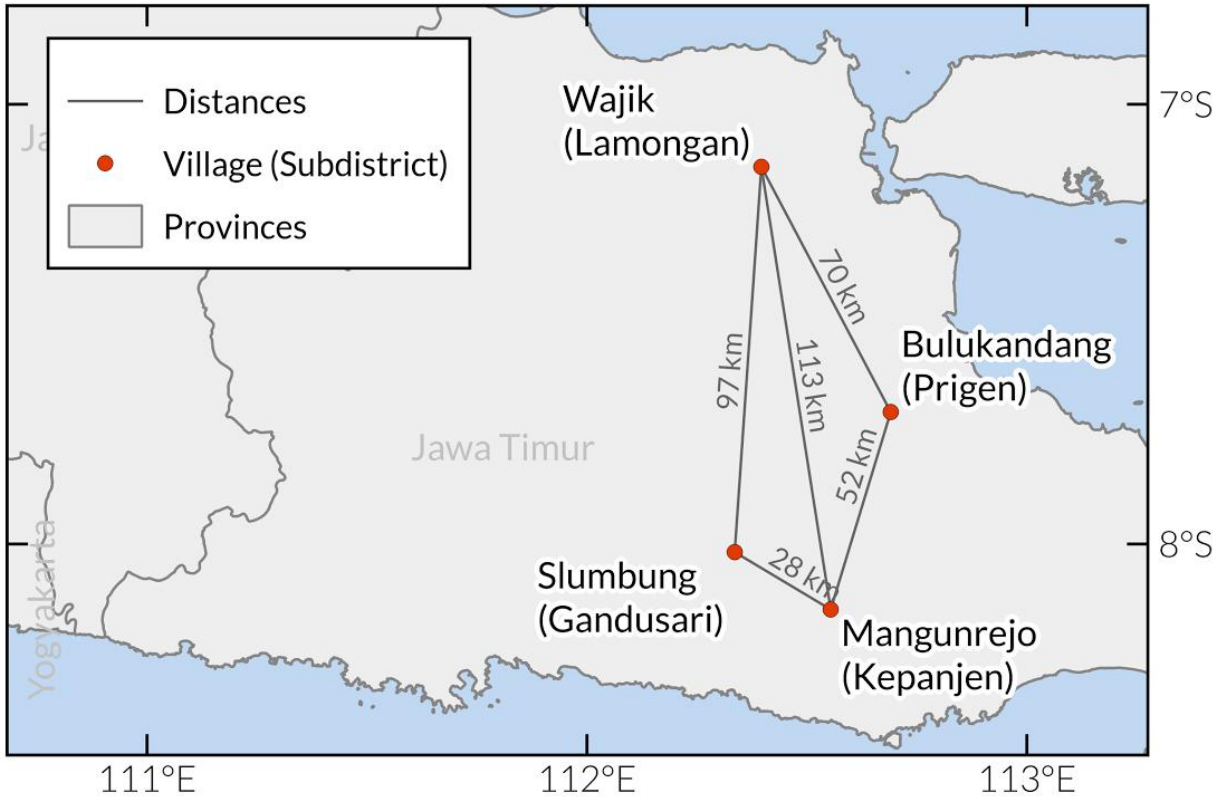
- Widespread environmental pollution through water flow
- Kill beneficial organisms
- Increase biodiversity loss → Ecosystem dysfunction
- External input dependency
- Vulnerable to environmental and market changes

Ecosystem restoration → to reduce agro-chemical costs, pollution and improve smallholders and human livelihood

http://bisnisbandung.com/pasca-mengganasnya-hama-wereng-kini-alih-fungsi-lahan-mengancam-produksi-padi/

Complex rice system project

- A collaboration IORC, UB and FSE, WUR
- Initially conducted in East Java, but will be replicated in Sumatera
- Using three-step method: experiment, workshop and FFS



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Experiment with CRS to restore ecosystem functions

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Workshop on CRS

- Participated by farmers. Researchers and provincial and district authorities of agricultural and food security bureau
- To present initial results of tested prototype in four districts of East Java and participatory to improve the design

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Participatory learning through FFS

- To disseminate knowledge on CRS
- To provide training for farmers to grow diverse plants and raise animals
- To get feedback from farmers on the design based on the local practice and knowledge

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Barriers/ challenges to mainstreaming the activities

- Initial capital outlay: building facilities e.g. fencing, duck housing, fish pond: initial inputs (fish, ducklings, diverse plant seeds)
- Illiteracy and lack to information access impede knowledge transfer on agro-ecology when the local knowledge has lost
- Lack of immediate benefits of CRS at first rice cropping cycle

Coping the challenges to mainstreaming the activities and recommendation

- Adopting a step-by-step approach to implement CRS across two to three rice-growing cycles
- Starting with the construction of the fish pond
- Cooperation with duck farmers
- Provide appropriate training e.g. FFS
- Using pictures and videos to address the illiteracy of FFS participants
- Include elements that can immediately add farmer income in an easy way e.g. vegetables as border plants

Thank you