Building adaptive capacity for farmers: The case of System of Rice Intensification adoption in Vietnam

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Presentation Outline

- Climate change and rice production in Vietnam
- System of Rice Intensification (SRI)
- Community-based SRI adoption in Vietnam
- Ways forward

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Climate Change & Rice Production

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Climate change and rice production

- High threat of Vietnam national's food insecurity
  - If the sea level rises 1 meter, over 7% of paddy land area will be inundated; total rice production will reduce 12% (about 5 million tons)
  - Potentially affect 10% of total population and 10% of GDP
  - Every increase of 1 degree C in night-time temperature leads to 7-10% reduction of rice yield
- Potential threat to global food security.

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Part of Problem

- Global statistics suggest agriculture (including rice cultivation) accounts for 8% of total GHG emission
- Thirsty crop:
  - 24-30% of global freshwater is consumed for rice production
  - 1 litter / second / 1 hectare of paddy field
  - 1 litter / second / domestic use by 1,000 people

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System of Rice Intensification (SRI)

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SRI Origins

Jesuit priest, Father Henri de Laulanié, is considered to have started SRI 20 years ago in Madagascar.

From 1 plant

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Where SRI matters?

- Current conventional practices:
- Traumatic root system (due to strong pull)
- Weakened capacity to produce tillers (old seedling, narrow spacing)
- Poor growth (inundated conditions)
- Poor use of fertilizer application
- Weak health and low resistance to diseases

Low returns on investment

environmental pollution

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Benefits that SRI can bring about

Less inputs: Seeds, water, labour for transplanting and chemical sprays

Increased yield: 10 - 25%

Improved sustainability: Reduced reliance on productive inputs & adaptive capacity

Social benefits: Community cohesion, gender equality

Improved living environment: Less fertilizer, pesticide residues

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SRI & Climate Change

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SRI & Adaptation

- Resistant to lodging
- Increased pest resilience
- Shorter growing season needed
- Reduced need for standing water
- More vigorous roots able to draw moisture from deeper
- Reduced planting rate allows quicker replant
- Reduced seeding rate requires less seed reserve
- Increased potential keeps traditional varieties viable
- Reduces seed requirement - smaller gene pool quicker to adapt

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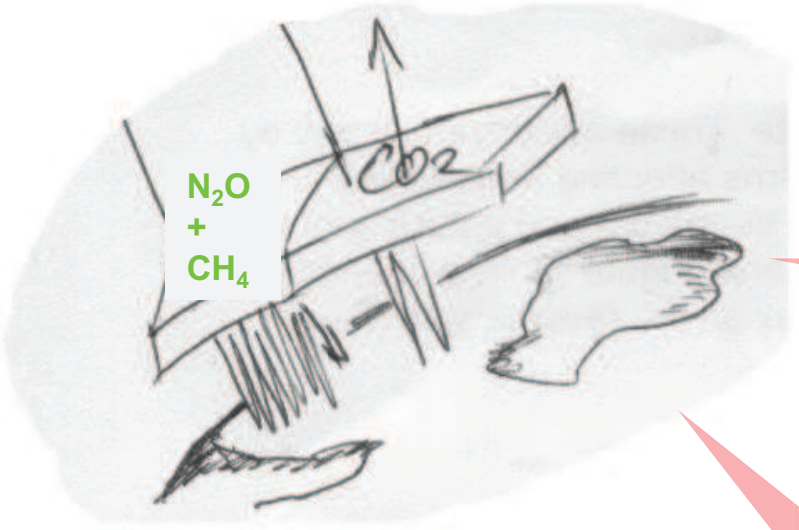
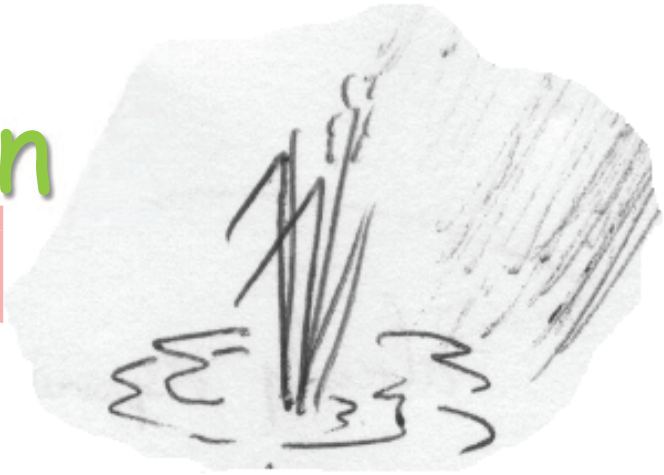
CH_4 has GWP of 23 (ie 23 CO_2e x 100years)

N_2O has GWP of 310 (ie 310 CO_2e x 100 years)



Mitigation



Reduced standing water – reduced methane emission

Use of legumes minimizing need to extract methane to produce N- fertilizer

Use of legumes minimizing need to use N-fertilizer (70% of which is lost to the environment)

‹back›

SRI community-based adoption in Vietnam

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Farming in Dai Nghia commune

- Scattered plots, 650 sm (0.16 acre) land per person. If weather is good, farmers earn $130 from this land.
- Three crop seasons including two irrigated rice crops & one winter vegetable crop
- Farmers raise pigs, chickens, ducks

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Introducing SRI to the community

- In 2006, 30 farmers (mostly female) participated in Farmer Field School and tried SRI on 4 ha with support of Oxfam and Plant Protection Department
- Experienced the first success, 30 first graduates become the key farmer promoters of SRI in all community
- After 3 crop trial, in mid 2008 the Cooperative used its own resources to apply SRI in all 178 hectares
- Output paddy rice are sold with premium as seed
- In 2009, Cooperative started apply SRI and organic practices; minimum-tillage potatoes

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Community SRI – Farmer Field School

Can you group come to convince my husband about SRI

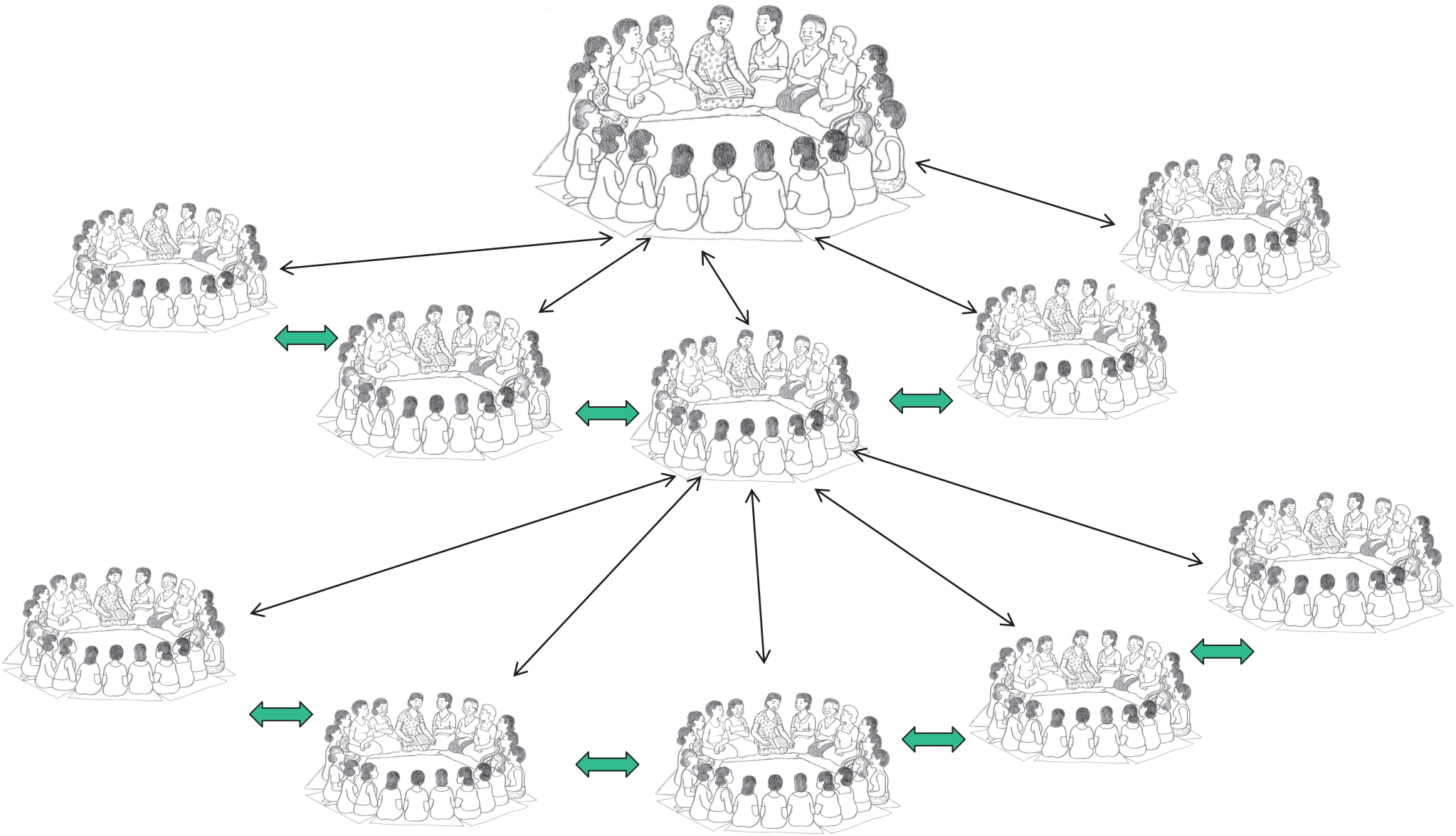
8 – 12 day old, too young to survive

Cooperative should compensate if there are losses

Oh, yes. Wider spacing, single seedling transplanting will save labour and seedlings

We must gain farmer's confidence; communal leaders ought to get involved.

Developing the network of key farmers



Communication & Outreach

- SRI leaflets, promotion calendar
- Multiple platforms of communication
    - Field Day
    - Regular meetings of cooperatives, communal committees, cross-sectoral meetings
    - Regular meetings of Farmer Union, Women Union
    - Media trip
- Farmer contest, art play

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Năm nguyên tắc ai cũng nhớ
Cấy mạ non hai lá là vừa
Một dảnh ta lại cấy thưa
Quản lý điều tiết nước vừa ruộng thôi
Lục bùn làm cỏ xong rồi
Hữu cơ phân ủ bạn thời nhớ cho
Ba - bốn phân nước là vừa
Bón phân làm cỏ giữ cho năm ngày
Đến khi lúa chín mới hay
Ta rút kiệt nước, gặt ngày ruộng khô.

Nhóm nông dân SRI
xã Phấn Mễ, Phú Lương, Thái Nguyên

CANH TÁC LÚA TRUYỀN THỐNG	CANH TÁC LÚA SRI
	Tiết kiệm 70 - 75% giống
	Giảm 50 - 100% thuốc bảo vệ thực vật
	Tiết kiệm 40 - 50% nước tưới
	Tăng năng suất từ 13 – 29%
	Tăng thu nhập từ 8 – 32% Lãi thêm từ 65.000 – 126.000 đồng/sào Bắc Bộ

SRI
Đơn giản mà hiệu quả

Tháng một 1

Chủ Nhật	Thứ Hai	Thứ Ba	Thứ Tư	Thứ Năm	Thứ Sáu	Thứ Bảy
30 27/12	31 28/12					1 27/11
2 28	3 29	4 1/12	5 2	6 3	7 4	8 5
9 6	10 7	11 8	12 9	13 10	14 11	15 12
16 13	17 14	18 15	19 16	20 17	21 18	22 19
23 20	24 21	25 2	26 23	27 24	28 25	29 26

Tháng hai 2

Chủ Nhật	Thứ Hai	Thứ Ba	Thứ Tư	Thứ Năm	Thứ Sáu	Thứ Bảy
		1 29	2 30	3 1/1	4 2	5 3
6 4	7 5	8 6	9 7	10 8	11 9	12 10
13 11	14 12	15 13	16 14	17 15	18 16	19 17
20 18	21 19	22 20	23 21	24 22	25 23	26 24
27 25	28 26					

Tháng ba 3

Chủ Nhật	Thứ Hai	Thứ Ba	Thứ Tư	Thứ Năm	Thứ Sáu	Thứ Bảy
		1 27	2 28	3 29	4 30	5 1/2
6 2	7 3	8 4	9 5	10 6	11 7	12 8
13 9	14 10	15 11	16 12	17 13	18 14	19 15
20 16	21 17	22 18	23 19	24 20	25 21	26 22
27 23	28 24	29 25	30 26	31 27		

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Results of SRI adoption

- 2003: IPM introduced SRI in Vietnam
- 2006, 3.450 farmers applied SRI
- 2007 - MARD acknowledged SRI as technological advancement
- 2008: 232.269 farmers & 61.241 ha
- 2009: 264,000 farmers & 85,422 ha
- 2010: 817.939 farmers & 130,365 ha
- 2011: 1,070,384 farmers & 185,065 ha

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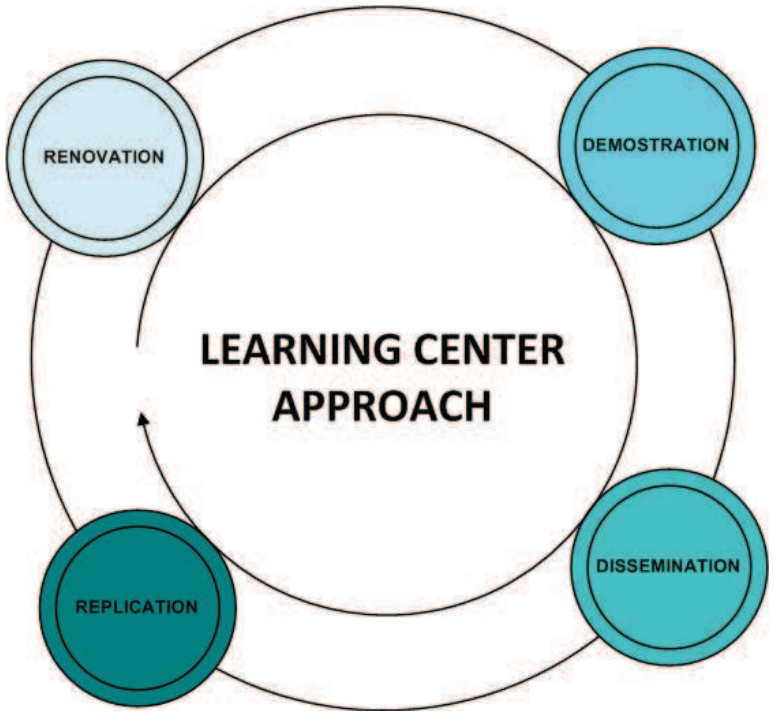
SRI business model

Renovation: to renovate the content of the field studies, its adoption method and analytical principles in a way to ensure the suitability and adoption by individual farmer and group.

Demonstration: is applied mostly at the group and communal levels via FFS.

Dissemination: of the initial results of FFS is made through various means of communication, including local newspapers, radio, televisions.

Replication: Relevant departments and organizations shall be invited to provide inputs and support to improve the training materials (while providing room for local flexibility) and strategies to replicate & extend this model



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Why learning-centered model?

- It enables continual feedback from farmers to make SRI more suitable and adoptable.
- It allows essential space for reflection and responsive actions → increased adaptive capacity
- It helps to increase farmer's ownership → multiple development impacts (e.g. household joint decision-making, community cohesion, woman's leadership)
- It provides platform for regular feedback from academics & technicians → political buy-in

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Ways forward

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How to move forward

How do we articulate and measure the limiting factors that we are seeing ahead of us?

What's preventing us from applying SRI?

What's slowing the promotion of SRI?

What's stopping us from going to scale?

What can we do to scale it up?

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Discussion points

What can SRI do to help farmers and communities?

- Adaptive capacity to CC impacts and resilience to unfavorable conditions
- Potential to reduce GHG emission; reduced use of herbicide, chemicals to degrade soil and pollute environment
- Facilitate communal solidarity (collaboration in water management, IPM practice)

Where should Government intervene?

- Decision, guiding papers, funds to expand community-based SRI application and incorporates monitoring and evaluation mechanisms
- Additional training for technician, particularly skill to work with farmers
- Increase communication and dissemination
- Extra investment and dissemination of scientific results about the potential of SRI in reducing CC impacts
- Exploration and study the possibility and mechanism to engage in the carbon markets

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Mrs. Bui Thi Bun – I am over 70 years old but still have to take care of field work. I have practiced SRI for 6 crops. The burden lessens while yield gradually increases. I wish farmers in other communities to be brave and strong in trying new ideas and innovations. It will help to overcome our difficulties.