

Experiences with SRI in Cambodia 2000-2007

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Overview of the presentation

- Progress of SRI development and dissemination in Cambodia
- SRI and new opportunity for farmers in diversification and access to market
- Lessons learned from working on SRI

SRI introduction in Cambodia

- CEDAC learned about SRI in 1999 through LEISA magazine, first contact with Normal Uphoff (CIIFAD) in 2000 through Roland Bunch
- SRI farmer led field experimentation conducted in 2000
- 28 farmers experimented SRI in 2000, around 60,000 farmers use SRI in 2006
- Consistent positive field results with since 2000 shows that SRI is appropriate option to address problem related to food insecurity and poverty in Cambodia as well as good entry point in rural development
- It took about **five years** to get SRI officially endorsed by the Ministry of Agriculture
- SRI is now widely supported and promoted in Cambodia, especially by provincial departments of agriculture

Traditional method vs SRI method in nursery and seedling management



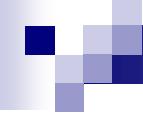
Traditional vs SRI method in transplanting



Early and frequent weeding







System of Rice Intensification (SRI)



Tillering potential of rice plant



Root growth and tillering of rice with traditional and SRI methods



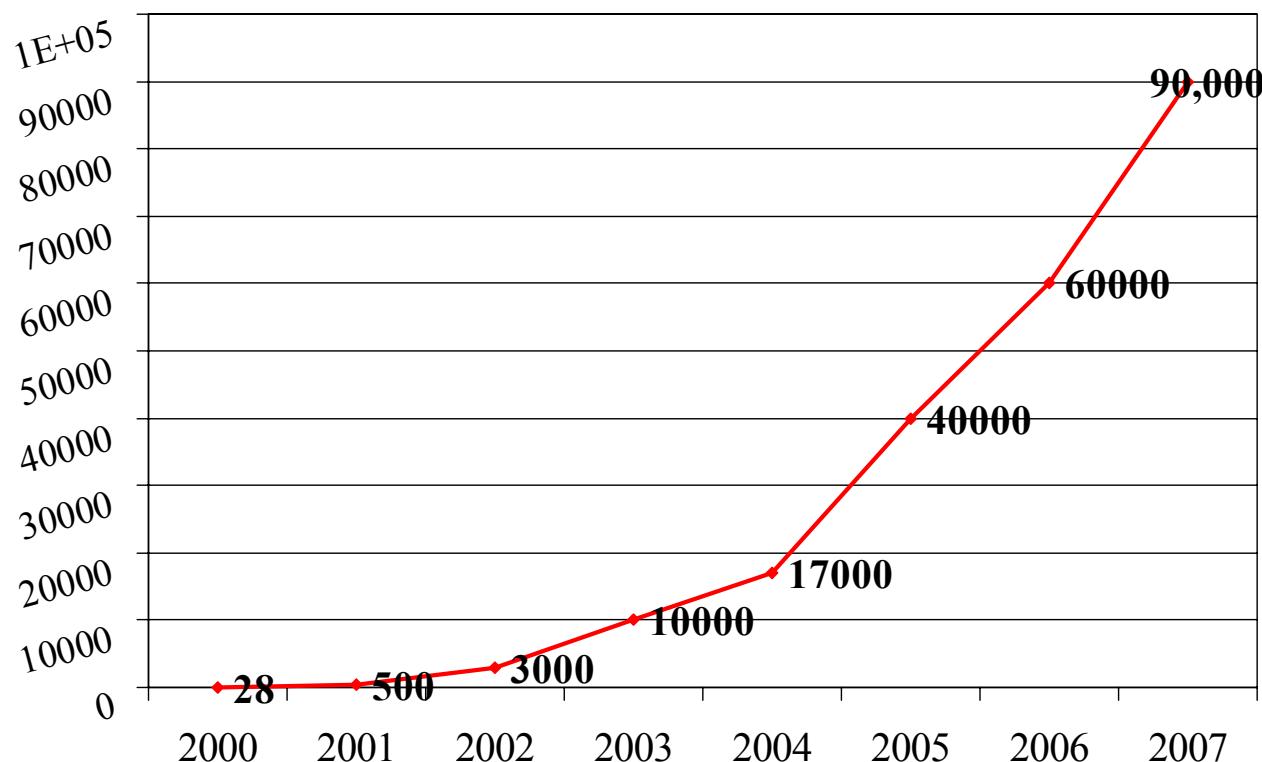
Tiller development and root growth of rice with traditional and SRI methods



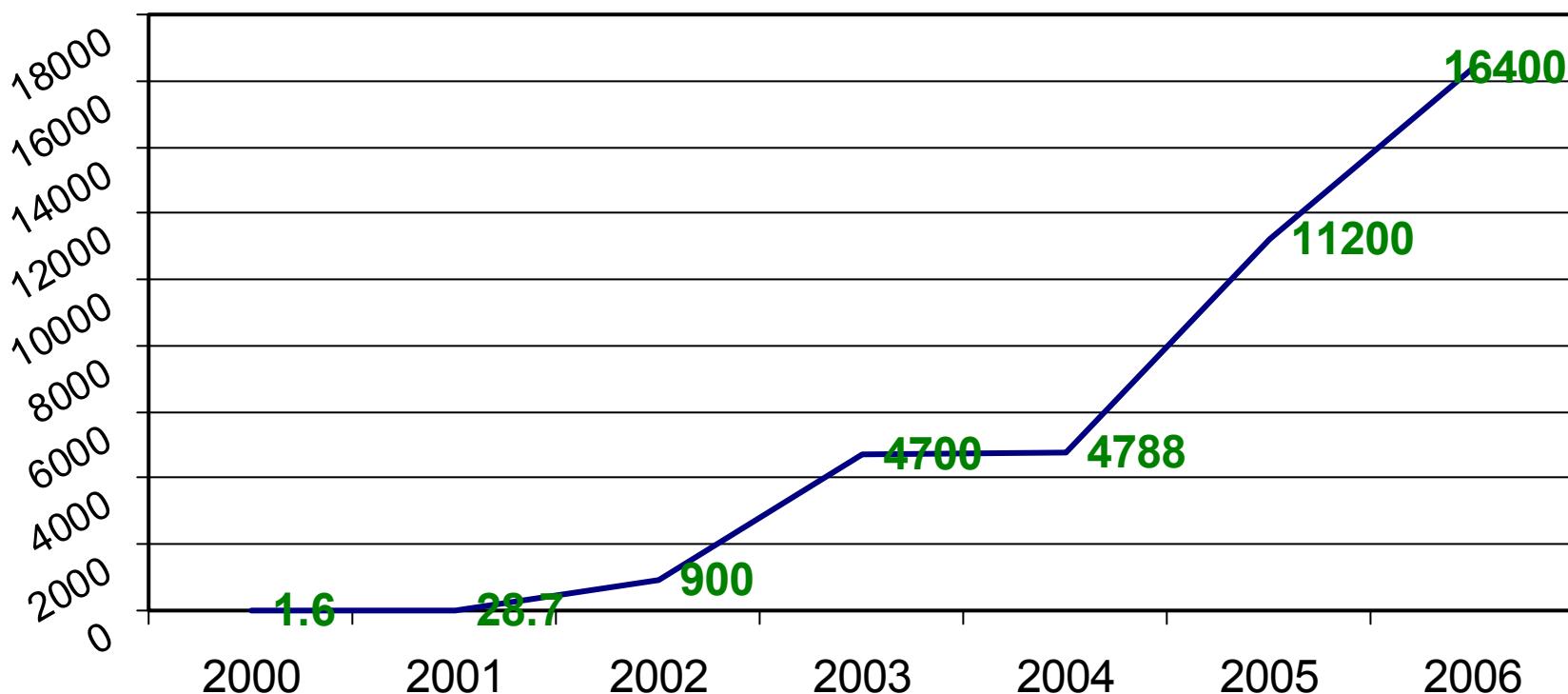
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Progress of number of SRI farmers in Cambodia



Area cultivated with SRI methods (in ha, from 2000 to 2006)



Number of SRI villages and provinces

	2000	2001	2002	2003	2004	2005	2006
Number of villages	18	122	350	815	1397	2500	2685
Number of provinces	4/24	7/24	11/24	14/24	17/24	20/24	24/24

Note: Number of rice growing villages: around 12,000 villages
Number of provinces and municipality: 24

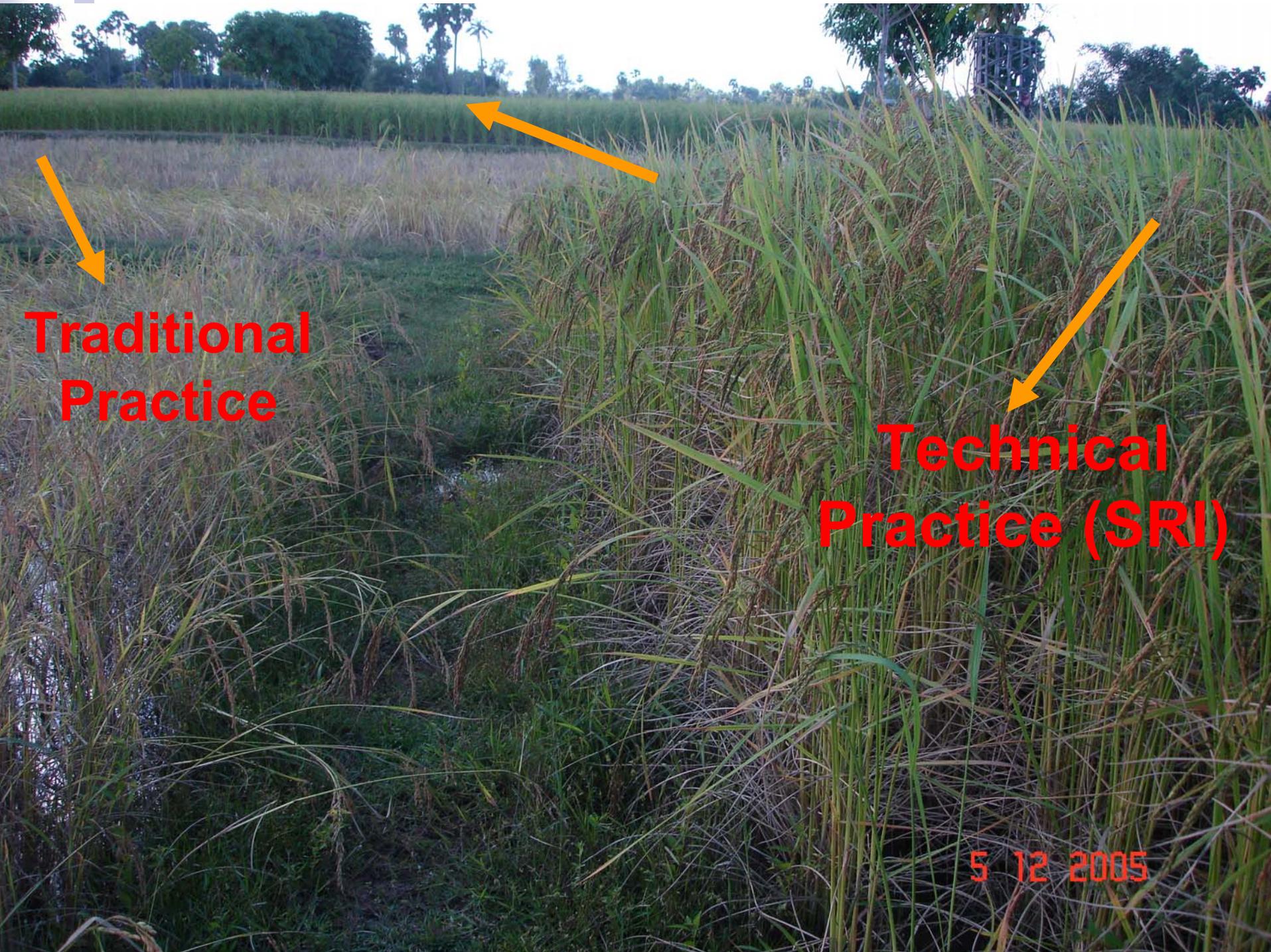
How we promote SRI

- Informal and formal farmer to farmer extension
- NGOs network
- Government departments of agriculture
- Local government
- Politicians
- School teacher
- Extension and learning materials
- Prize of best SRI farmers
- Market incentives for organic SRI farmers

Benefits from SRI

- Yield increase from 1.5-1.8 tons per ha to 2.5-3.5 tons per ha (increase of 50% to 150%), with traditional/local varieties
- Some SRI farmers achieve yield **more than 6 tons per ha**





**Traditional
Practice**

**Technical
Practice (SRI)**

5 12 2005



Technical
Practice (SRI)

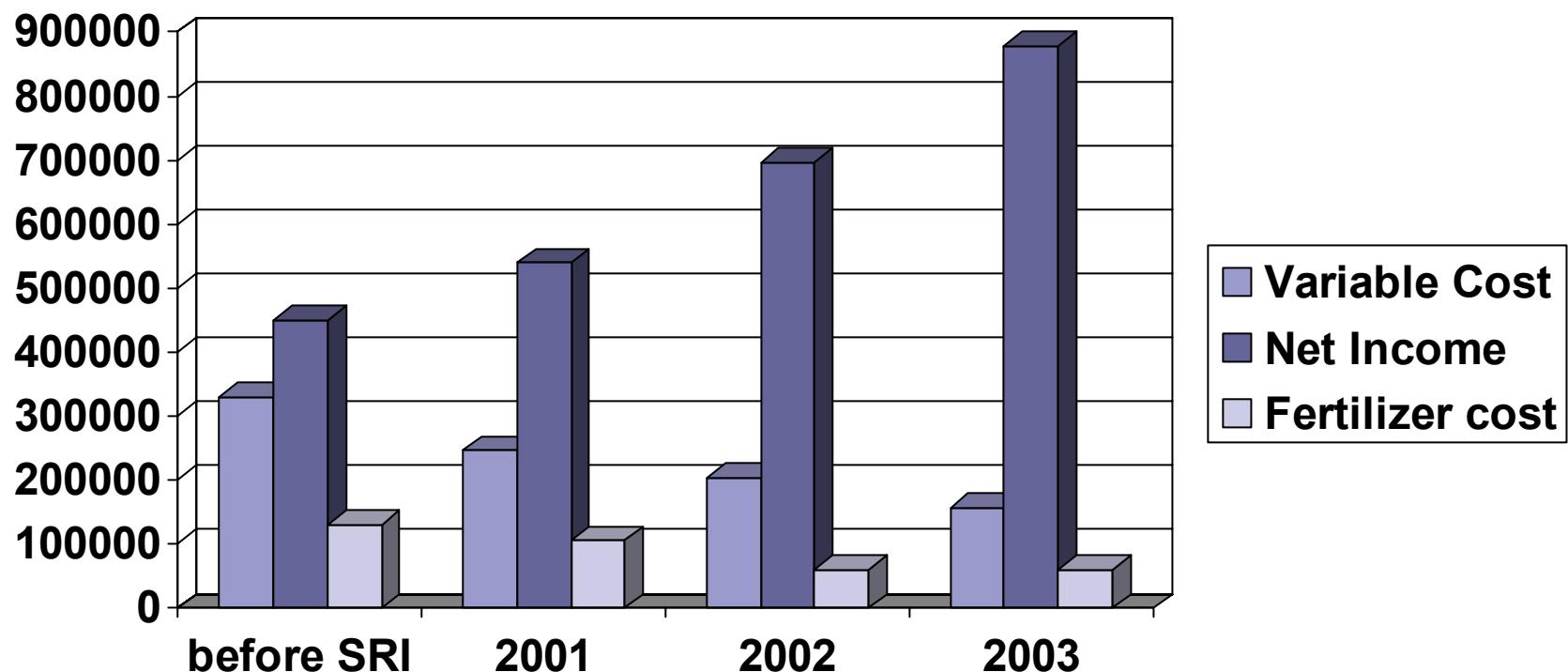
Traditional
Practice

5 12 2005

Benefits of SRI for farmers

- Seed requirement reduced by 70-80%, fertilizers use decreased by 50 % (from 150 kg per ha to 75 kg per ha), and most SRI farmers have given up pesticide use
- Net income from rice per ha has increased from around **58 \$US per ha to 172 \$US per ha** (almost **200 % increase**).
- Under marketing support from CEDAC, increasing number of SRI farmers now market their rice under organic brand, and receive 15 % premium

Change of income earned from rice production (n=120 farmers, in riel)



Benefits of SRI for farmers

- Increased **self-confidence and self-reliance** as they can get higher production by using only their existing resources
- Growing interest among farmers in working on other technical and social **innovations (for example saving for self-reliance, joint marketing and joint purchase)**
- Enabling farmers to **diversify** by using rice surplus to feed animal and to allocating or converting parts of rice field for other agricultural production (vegetable, fish, animals, tree planting), from SRI to SID (System of intensification and **diversification**)

New opportunity for rice farmers

- More rice means more land for diversification: Intensification for Diversification
- From subsistence rice farming to market oriented rice farming

System of intensification and diversification (SID)

- Rice fields are converted into multi-purpose rice field :
rice field, pond and canals, dike, garden
- Rice field :
rice with SRI methods during the wet season
Other non-rice crops during the pre- and post rice season
- Pond and canal : harvest rain water for irrigation, and for draining water from rice field, aquatic vegetable, and fish culture
- Garden for growing vegetable
- Dike for growing nitrogen fixing trees and other crops (cassava, sugar cane etc), raising animal

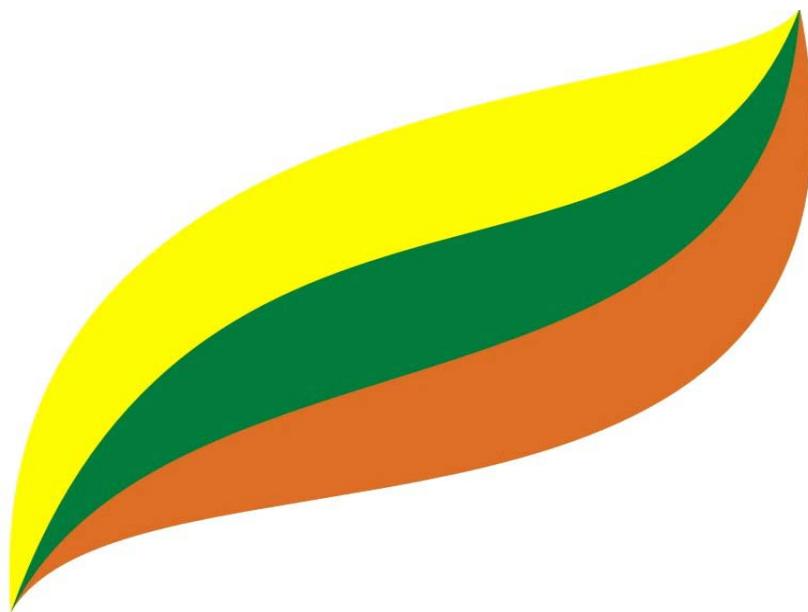
Benefits of SID

- Higher rice yield, vegetable, fish, green manure, fire wood, fodder, animal
- Improved family nutrition
- Net income increase more than 3 times if compared to rice only, more employment opportunity for family labor
- Increased farm-biodiversity and sustainability of resources use

SRI opens market opportunity for subsistence rice farmers

- With SRI increasing farmers are able to produce rice surplus
- CEDAC is supporting them to market rice surplus to the urban consumers in Phnom Penh as organic SRI rice (brand name: natural agri-product), with about 10 to 15 premium
- CEDAC' support: organizational development, internal control system and marketing support

Brand name of the organic SRI rice



ଜୀବିଜ୍ଞାନ ପରିପାଳନ
Natural Agri-product

Progress of producer and supply of organic SRI rice

Items	2004-05	2005-06	2006-07
Number of producer	200	1000	2100
Milled rice in tons	27	120	250

The organizational structure of organic SRI producer groups

- Village-based producer group
- Inter-village-based producer cooperatives
- Local confederation of producer cooperatives
- National confederation of organic SRI producer cooperatives

Marketing support

- CEDAC operate own shop specialized in selling organic products, which is known as Natural-Agri-Product Shop or NAP shop

The shop is responsible in:

- Direct sale to consumers
- Sale through super markets and rice retailers
- Consumer education and network
- Publicity/Advertisement

- CEDAC is working with CIIFAD and Lotus Food for possible export of organic SRI rice to the US

Financing marketing and producer networks

- Capital invested by CEDAC and initial subsidy from Oxfam and other (State Dept, Gate ?)
- Capital deposited by members during the first year : 5000 riel (1.25 USD) per producer, and 50 Riel per kg paddy sold, with voluntary contribution in the following years
- Producer organization receive 30 riel per kg to cover the cost of their activities (10 riel to village-based group, 5 riel per kg to inter-village coop, 5 riel per kg to local confederation and 5 riel per kg to national confederation)
- Parts of the profit go to the VPG for community development purpose and go to CEDAC for capacity building and organizational support to producer network

What we learn from working on SRI

- SRI is about **ideas/principles** such as such as systematic combination of optimal spacing, age of seedling, number of seedling/plant per clump, planting time, healthy seedling, soil aeration and compost) to promote **root and healthy plant growth** are to be adapted/modified by farmers to improve their rice and other crop production (such as bean, gourd etc)
- SRI ideas (systematic combination of farmer best practices) are used to develop the management methods to improve chicken raising successfully in Cambodia
- SRI is about changing the **ways of thinking** of farmers by leading them to learn to appreciate what they have and what they can do to improve their own crop and their own situation by improving the ways they are doing or managing the crop and their own situation rather then only depending on external solutions or modern input (especially chemical fertilizers, new seeds). This lead to develop a more **self-reliance** attitude

What we learn from working on SRI

- SRI leads to farmer's **self-empowerment** and **enthusiasm** to further develop other innovations
- SRI contribute to the change of the attitude of extension workers from transferring package of fertilizer, seeds recommendation to assisting farmers to understand more about rice and how to help rice to grow better as well as to facilitate the sharing and social learning among farmers
- The resistance from the agronomist to SRI shows that they tend to have the attitude of paternalism, and they tend to see farmers as people who lack intelligence and innovative capacity. This may explain why agricultural development, especially in rice, have not bring expected results

Concluding remarks

- SRI is not only the strategy to grow more rice, but also to diversify and to empower farmers
- SRI ideas are not only for rice, but it can be adapted to improve other crops, even livestock
- Changing the attitude and behavior towards crop and farmers are the key to successful in working to support farmers to improve their lives