# SRI

System of Rice Intensification

# Pilipinas

# Usapang Kaunlaran

DZEC 1062 khz, Saturdays, 4 AM to 6 AM

Meeting the challenges
of Climate Change:

# Producing more rice - less water, no chemicals

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# Situationer:

- We eat rice for our staple food
- We need at least 12 million MT yearly
- We do not produce enough
- We are the world's largest rice importer
- We are not globally competitive
- We are not prepared for market liberalization
- We are not ready for climate change

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# Are we rice secure?

> In the 70s and the 80s and as late as 1992, we were self-sufficient in rice. From 1993 to 2011, we depended on rice importation to secure our food needs. Rice is very important to our poor kababayan, who spent 32% of their total food expenditure in 2006 on rice.

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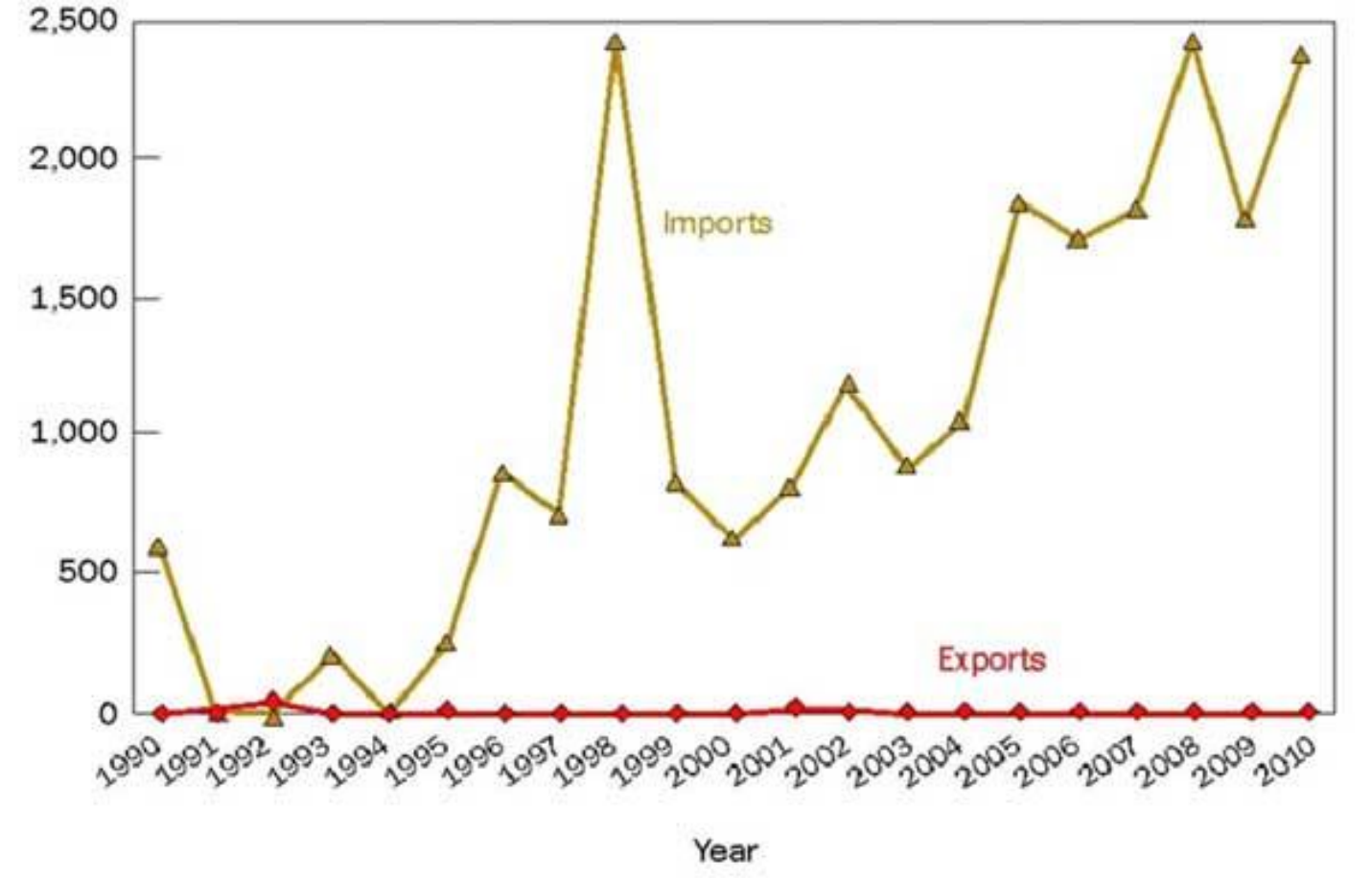
# Rice imports vs. exports




- Ricepedia, CGIAR

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# Constraints to rice production

- **Climate change** – drought and heavy rainfall;
- **Growing population** – increased demand;
- **Declining land area -** unabated conversion;
- **High cost of inputs** – fertilizers, pest control, labor;
- **Poor drainage and irrigation** – lack of funds

**- Ricepedia, CGIAR**

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# Wet Realities

- To produce 1 kg of grain, farmers have to supply 2-3 times more water in rice fields than other cereals.

  - Baker *et al.*, 1998

- 98.5% of the world's liquid freshwater supply is found underground.

  - WWDR, 2006

- 80% of the freshwater resources are used for irrigation purpose half of which is used for rice production.

  - Dawe *et al.*, 1998

- "Despite the constraints of water scarcity, rice production must rise dramatically over the next generation to meet the food needs "

  - Serageldin, 2011

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# How to cope with the shortage?

- promote self-sufficiency through hybrid rice production;
- change diet by shifting from rice to other food stuffs; and
- consume less rice, eat more fruits and vegetables.

- Normalyn Yap TIBAO
National Chung Hsing University

# How to attain self-sufficiency?

Rice Sufficiency Master Plan – 2009 to 2013

- improved and efficient irrigation;
- use of high-quality hybrid and inbred seeds;
- integrated and sustainable management;
- soft loans for STW and surface water pumps;
- delivery of extension support services;
- rice seed subsidy; and
- financing for farm and postharvest machinery.

- Ricepedia, CGIAR

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# Farmers wonder why:

- they pay so much for irrigation?
- hybrid seeds are so dependent on chemical inputs?
- they keep on buying expensive seeds for planting?
- is it so hard to get loans?
- extension personnel rarely come around?
- rice seed subsidy has to be mostly hybrid?
- fertilizer subsidy is mostly chemical?
- farm machinery are lying idle in the regional depots?

# Constraints to organic rice production

## Cultural

- Slow to adapt to organic technology
- Strong bias for chemicals and hybrids

## Economic

- Dismantling of QRs in 2017
- Government preferred policy to import

## Environmental

- Degradation of the environment
- Climate change

# DA's detailed El Nino Action Plan

## DA - El Niño Action Plan: National Budget Requirement (in million pesos)

| PAPs | TOTAL | FUNDED 2016 | UNFUNDED |
|---|---|---|---|
| GRAND TOTAL | 3,092.36 | 979.90 | 2,112.46 |
| ***Production Support*** | 1773.4 | ***883.40*** | ***890.00*** |
| Rice | 607.51 | 305.90 | 301.61 |
| Corn | 380.67 | 27.10 | 353.57 |
| High-value Crops | 118.81 | 28.10 | 90.71 |
| Livestock | 90.63 | 44.20 | 46.43 |
| Fisheries | 478.1 | 478.10 | - |
| Crop Pest Management | 97.68 | - | 97.68 |
| ***Irrigation Augmentation*** | 1154.41 | ***96.50*** | ***1,057.91*** |
| Small-scale irrigation projects | 798.18 | 96.50 | 701.68 |
| Rehabilitation of SWIP & DD | 210.23 | | 210.23 |
| Cloud seeding operation | 146 | - | 146.00 |
| ***Cash for Work*** | 164.6 | - | ***164.60*** |

*PhP 1.89B attribution for the 4Q

ENGR. CHRISTOPHER V. MORALES
OIC-Director, Field Operations Service
February 1, 2016

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# The ideal organic rice production technology

- Easy to follow;
- Costs less to apply;
- Eliminates the use of chemicals;
- Makes the rice plant more prolific;
- Rice plant is more resistant to pests and diseases;
- Stronger to withstand calamities

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# Question: What are we looking for?

**SRI is a climate-smart, agro-ecological methodology for increasing the productivity of rice by changing the management of plants, soil, water and nutrients.**

- Norman Uphoff, Cornell U

# Answer: A crop production technology that is climate tolerant

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# Principles of System of Rice Intensification

The interrelated main SRI principles:

1. Early, quick and healthy plant establishment
2. Reduced plant density
3. Improved soil conditions through enrichment with organic matter
4. Reduced and controlled water application
5. Preference for heirloom rice varieties ; no GMO, no hybrid

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# Thorough land preparation


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# 6.5 Kilos of seeds per hectare


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# Square planting (25cm x 25cm)


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# No more stressful uprooting


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# Transplanting them young


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# Maximized use of organic nutrients


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# Manual weeding


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# Controlled irrigation


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# More tillers, deeper root system



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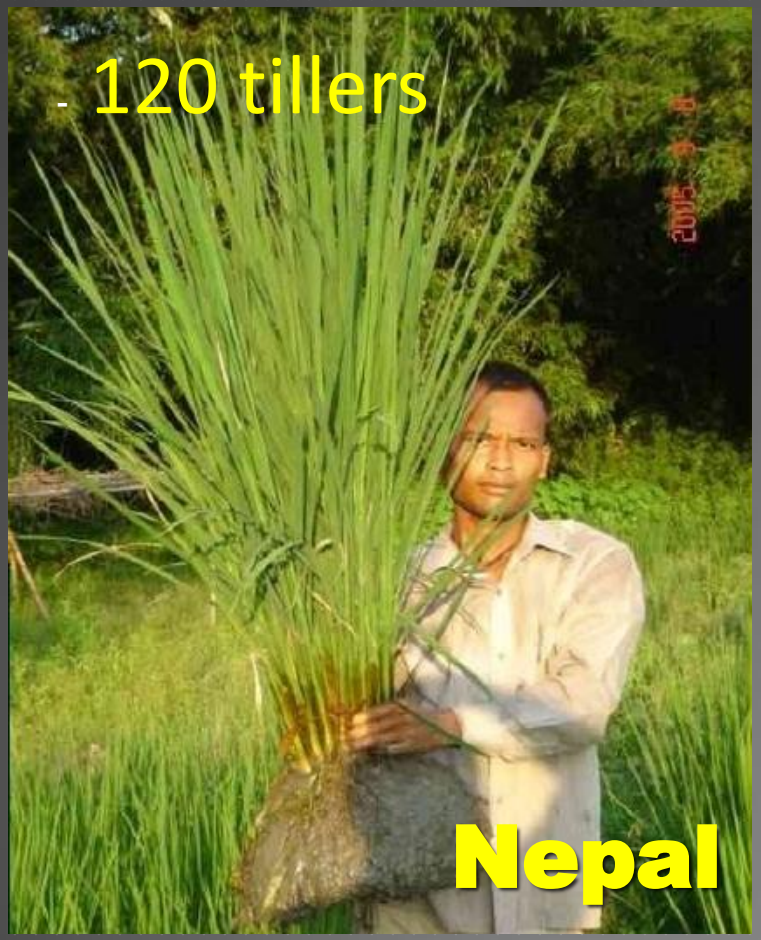
# Healthy Prolific Plants





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# Typhoon Resistant

After a tropical storm


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# Traditional vs. SRI

| Aktibidad | Traditional | SRI |
|---|---|---|
| Paghahanda | Dayami sinusunog | Ikinakalat, pinabubulok |
| Binhi | Hybrid | Sinauna |
| Binhi/ektarya | 1- 3 sako | 6.5 kilo |
| Herbicide | Kemikal | Weeder |
| Mollusicide | Kemikal | Gawing Pataba |
| Dami ng tubig | Binabaha | 1/3 lamang |
| Pataba | Chemical | Compost |
| Edad ng palay | 18 – 30 araw | 8 – 12 araw |

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# Traditional vs. SRI

| Aktibidad | Traditional | SRI |
|---|---|---|
| Dami ng punla | 3 - 5 | 1 lang |
| Paraan ng pagtusok | Waray | Diretso, nakalinya |
| Distansya ng punla | Tantyahan | 10 - 12 pulagda |
| Bilang ng suhi | 5-25 | 50 -120 |
| Ani bawat ektarya | 80 – 120 | 150 - 300 |
| Gastos bawat ektarya | P45,000 | P15,000 |
| World record/ hectare | 382 cavans<br>Dr. Yuan Long Ping | 448 cavans<br>Sumant Kumar |
| Pilipinas – 338 bags per hectare, Dr. Joey Tolentino, Bongabon, Nueva Ecija | | |

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# SRI Pilipinas

Obet Verzola
Nat'l Coordinator

- Provide trainers' training and support personnel
- Provide season-long training and instructional materials
- Assist SRI farmers in documentation

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# Additional data - Water retaining adjuvants

| Soil Adjuvant | Water Absorptive Capacity |
|---|---|
| Carbonize rice hull | 0.9 times of its volume |
| Peat moss | 2 times its volume |
| Coir dust | 3 times its volume |
| Agar-agar | 25 times of its weight |
| Super Absorptive Polymer (SAP) | 343 times of its weight |

# Thank you!

Manong Jess

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