Techniques, Technologies and Training for Climate-resilient Rice-based Agriculture

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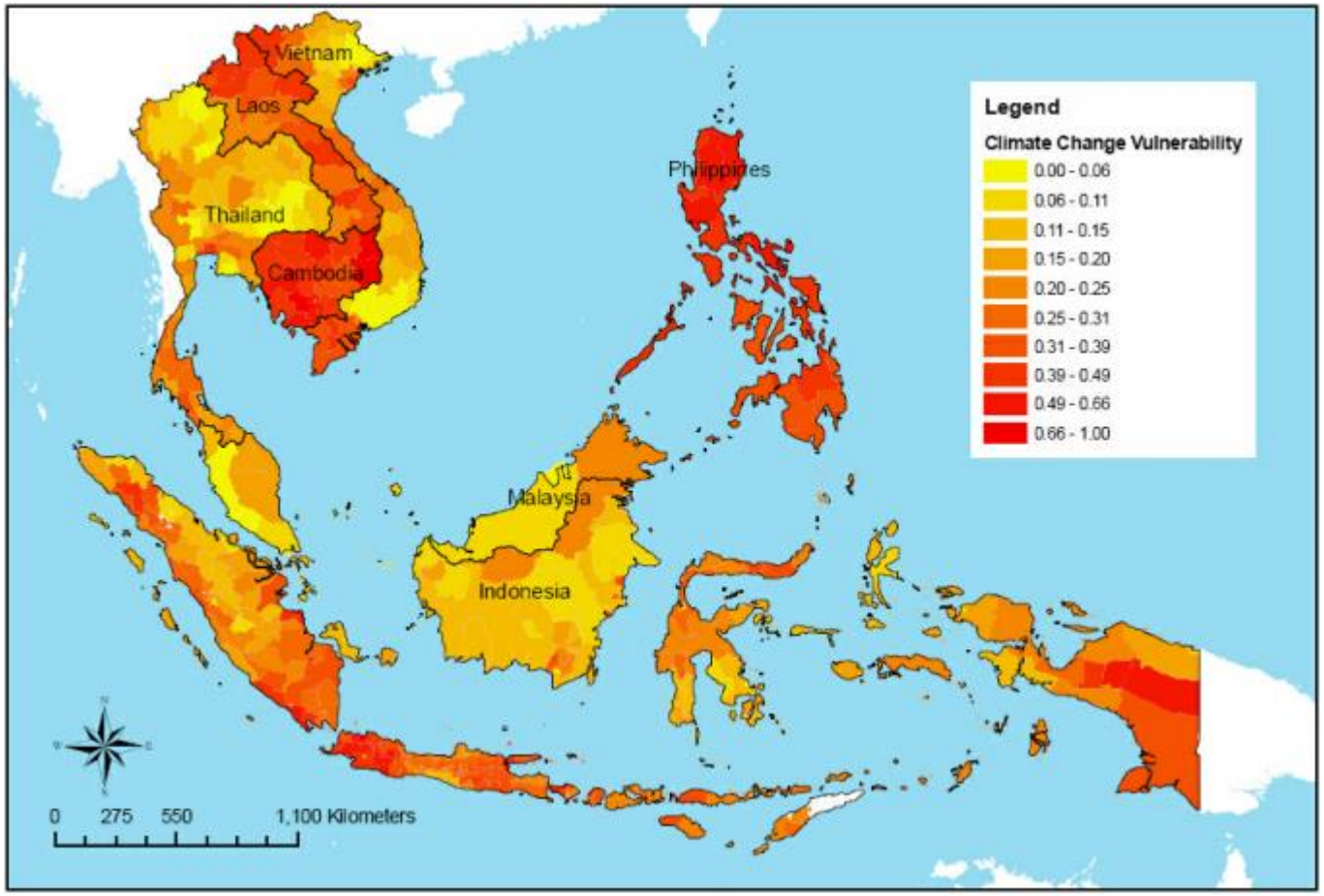
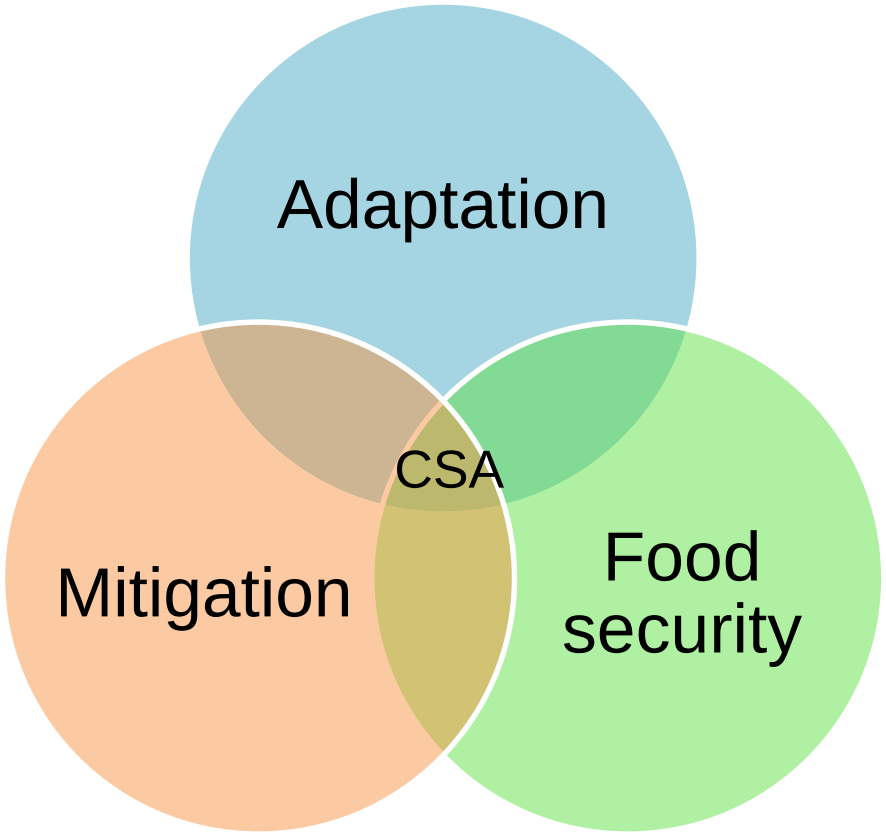
Climate vulnerability across ASEAN

(Source: IDRC)



Climate smart agriculture: scope and barriers to adoption



89%
Training/ Information barriers

36%
Policy/Institutional barriers

31%
Economic barriers

Source: WB, CIAT, CCAFS

Stress-tolerant varieties and Seed system

Image: CCAFS

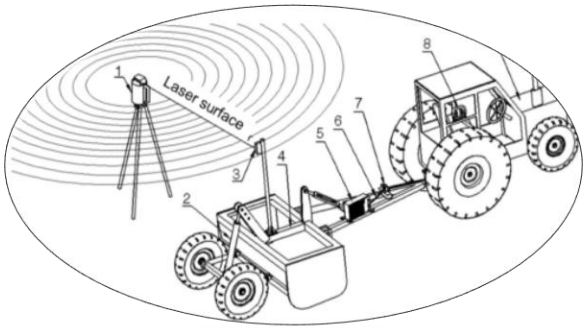
Drought stress varieties

5-6 tons/Ha

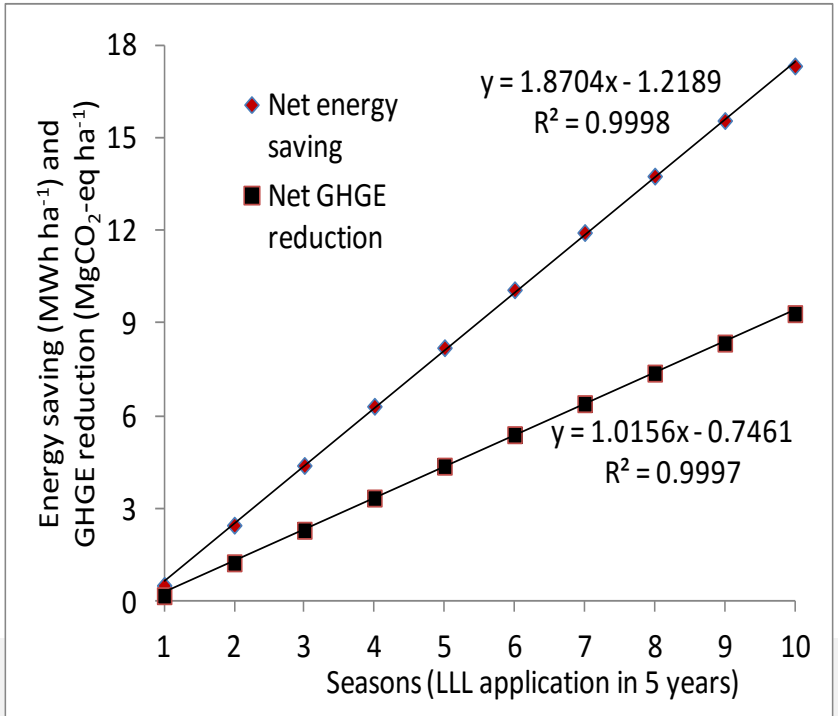
Community-based seed system

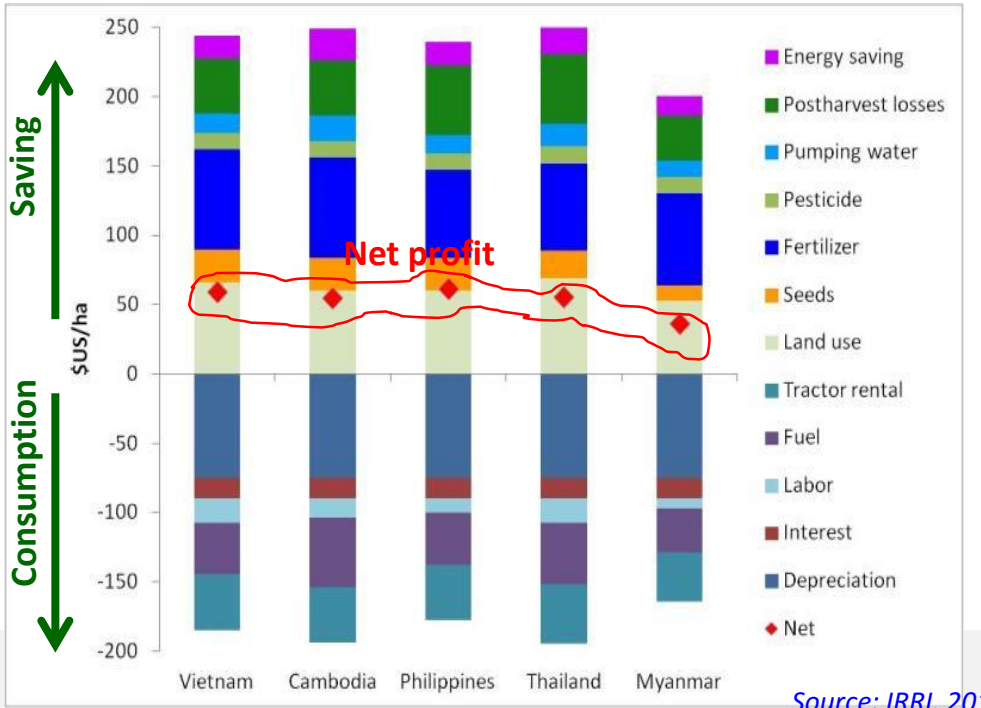
Icons by: Gan Khoon Symbolon, Eucalyp, Made, Lay, Chanut is Industries, Wilson Joseph, Alessandra Antonetti, Gregor Cesnar, The Noun Project

Laser land leveling



Increase yield: 5-15%, saving water: 20-25%, saving fertilizer and pesticide: 10-13%, reduce postharvest losses: 2-5%





Source: IRRI, 2017

RCM: site-specific nutrient management advice

Yield increase of 5-10%

Lower fertilizer costs, increased net income by $154 compared to FP

AutoMon: Automated AWD

Up to 30% reduction in water use

Up to 48% reduction in CH4 emission

Integrated Pest Management

~0.5 T/Ha rice increase through EE & BCA

~10% higher yield with lesser herbicide

~90% reduction in neck blast with res. var.

~90% reduction in rat damage

Rice Straw Management

Validated benefits of straw removal

$100-120/t profit mushroom prod

$3-5/t profit for mechanized balers

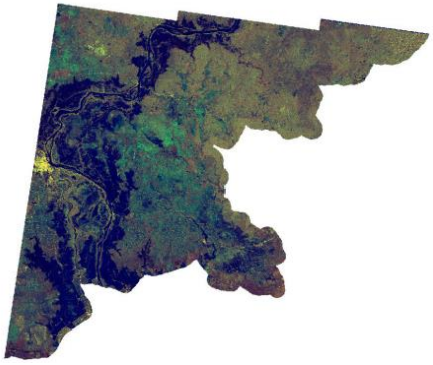
Diversified rice-based systems

Rice-maize/Rice-mungbean/Rice-Cassava rotation after mechanized Direct seeded rice

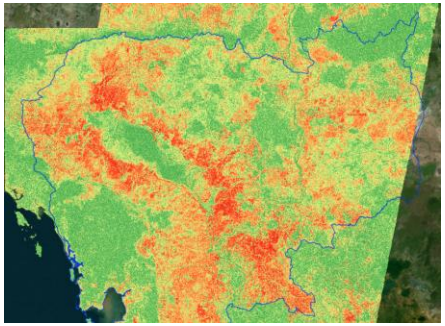
Large scale demonstrations

Feasibility data

Remote sensing and Crop Insurance



Flood map 2016



Drought map 2016

Validated high-accuracy maps of rice landscape

Human and hardware capacity

Dialogue on Crop Insurance

CSA Technology Ranking – prioritizing technologies for scaling up

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Adaptation, mitigation and food security: Multi-criteria ranking system for climate-smart agriculture technologies illustrated for rainfed rice in Laos

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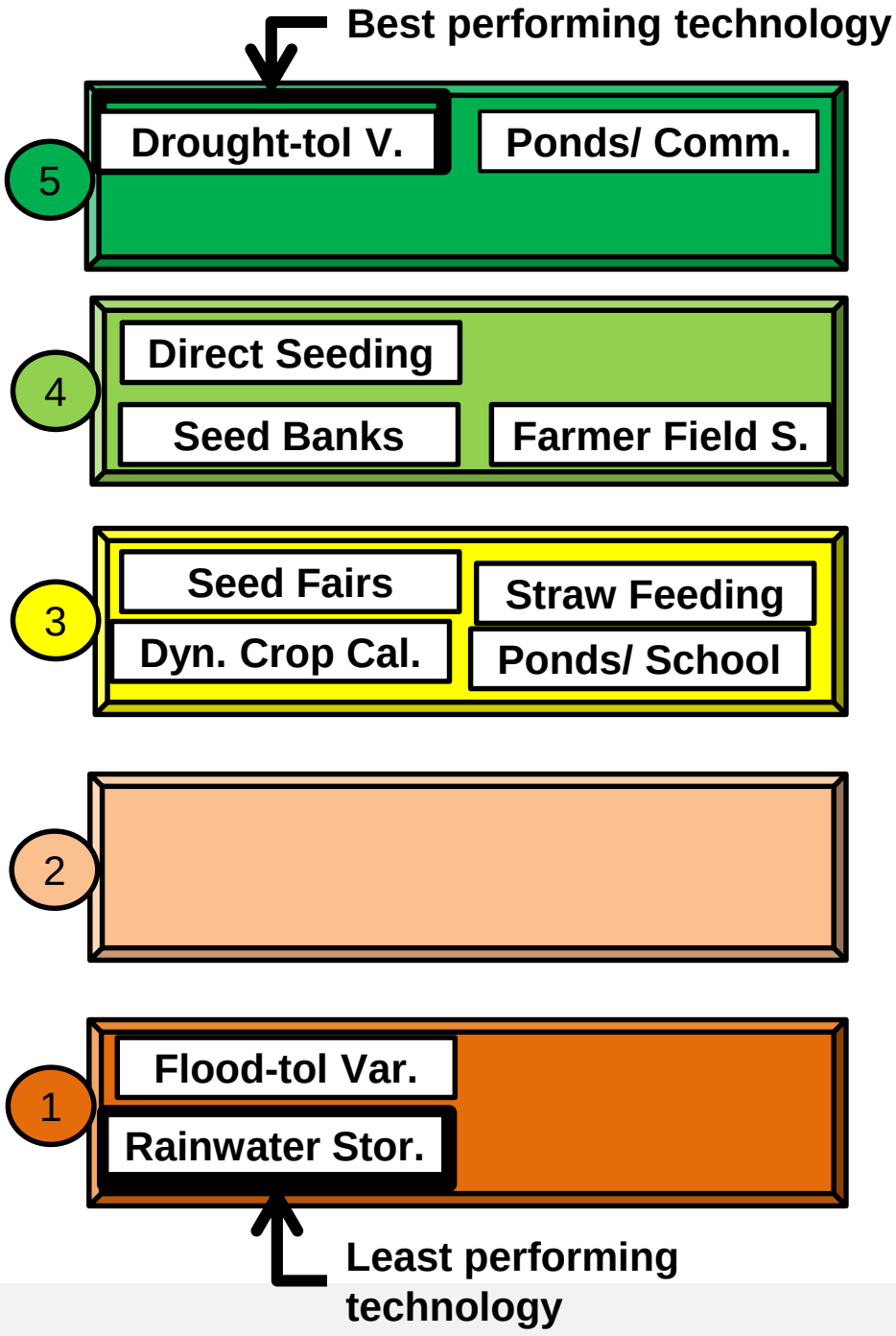
Criteria for CSA scaling up assessment

	Core criteria	Performance criteria (on-farm drivers of adoption)	Leverage criteria (off-farm drivers of adoption)
Farmers	Adaptation potential	Farmer incentives	Community/Gender benefits
Extension workers/policy makers	Food security benefits	Opportunities for scaling	Policy alignment
Scientists	Mitigation potential	Maturity of technology	Paradigm shift potential

QUESTIONS TO FARMERS

C1) *Adaptation*

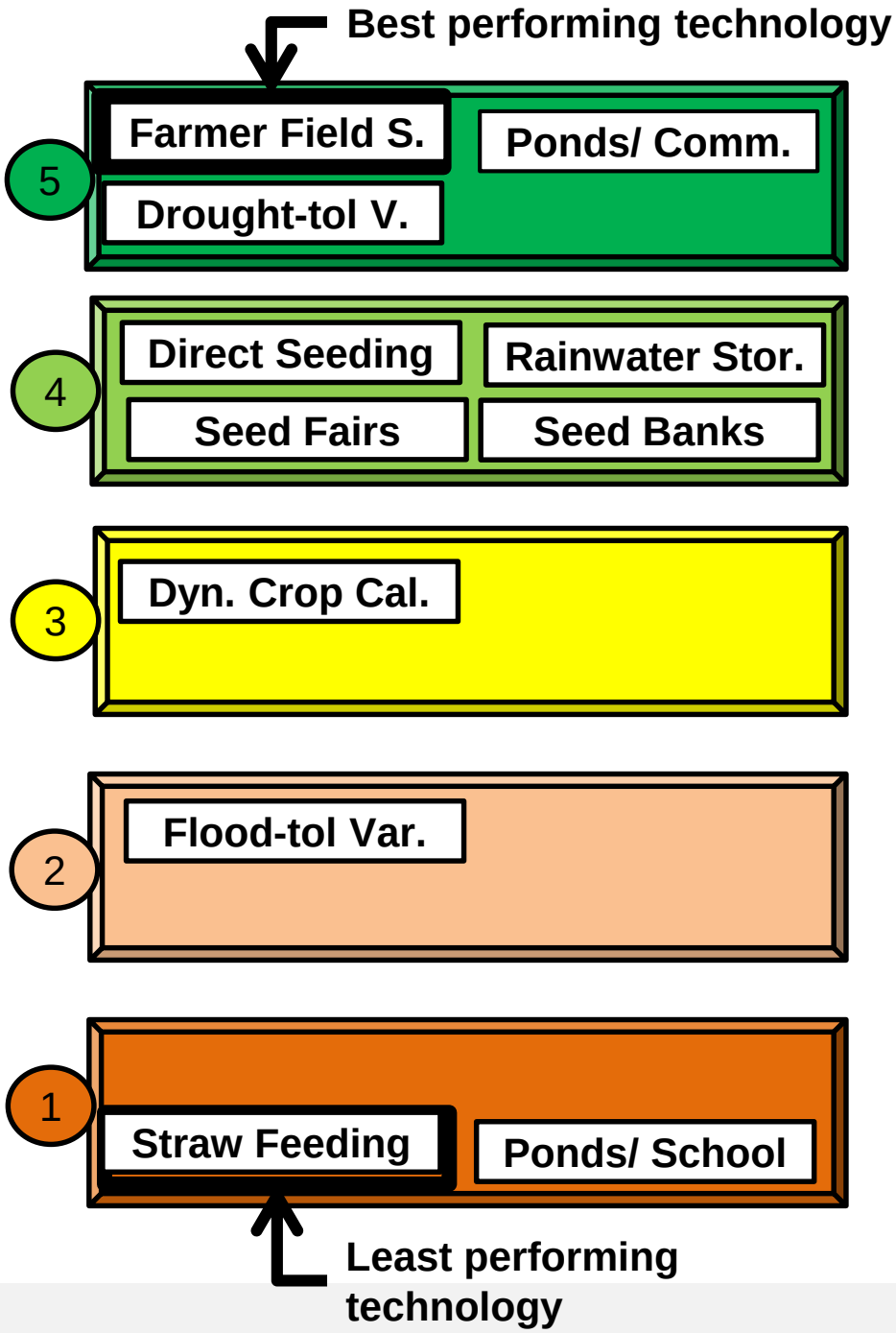
Which is the best technology for helping you to adjust to climate variation and extremes



QUESTION TO EXTENSION/ POLICY MAKERS

C2) *Food Security*

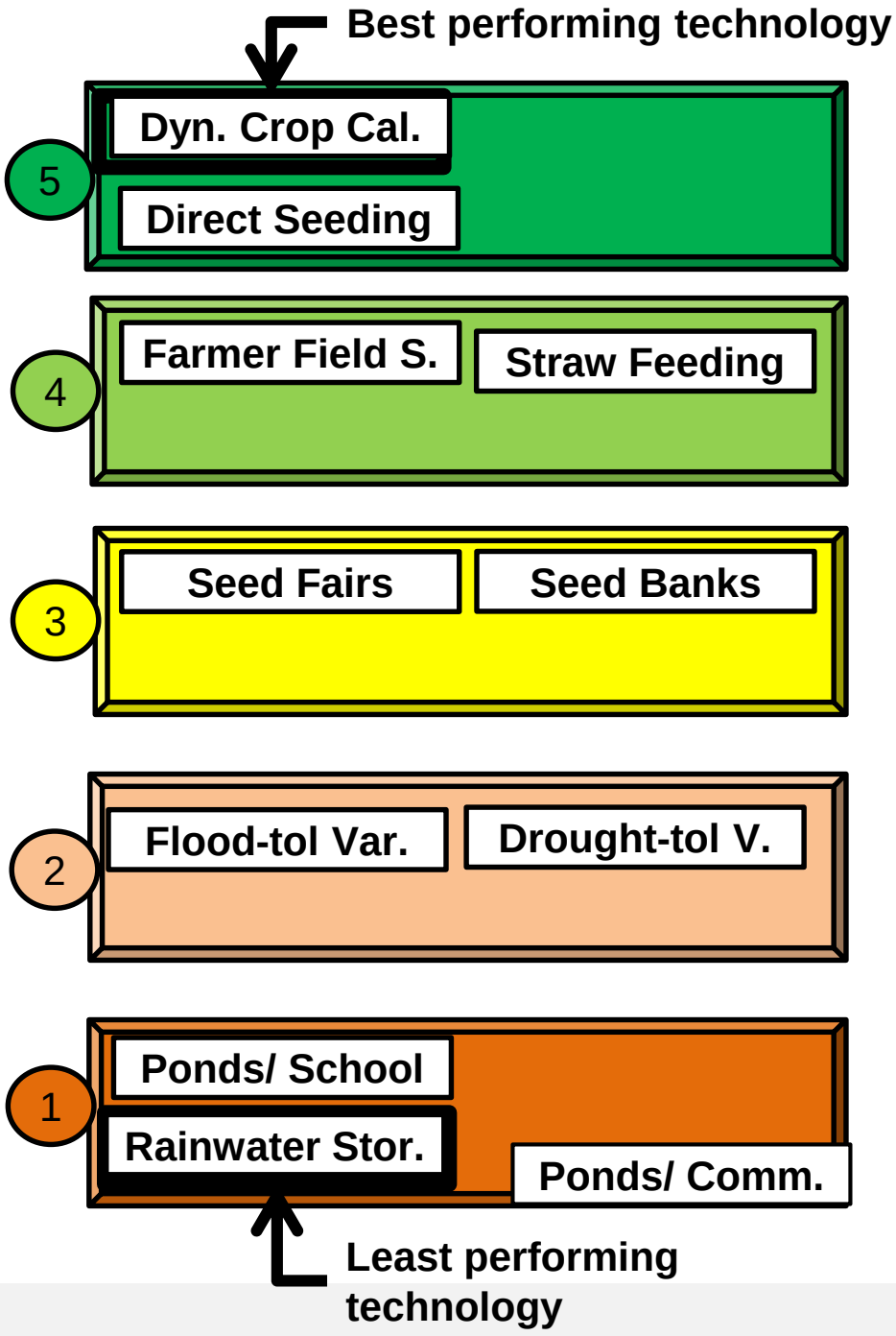
Which is the best technology in helping rural households to get better access to food?



RESEARCH-BASED RANKING

C3) Mitigation

Which technology has the highest mitigation potential?



CSA Technology Ranking for CSV in Phailom

CSA Technology	Ranking Index[a)]
Drought-tolerant rice varieties disseminated	89%
Direct seeding disseminated	82%
Ponds for community gardens	73%
Farmer field schools conducted	78%
Seed banks operated by the community	71%
Dynamic crop calendar applied	70%
Seed fairs conducted	61%
Straw feeding to cattle	54%
Flood-tolerant rice varieties disseminated	52%
Pond for school garden	42%
Rainwater storage tank for vegetable production	37%

a) Percentage of maximum score

Sustainable Rice Platform (SRP) – a public-private mechanism for CSA scaling up

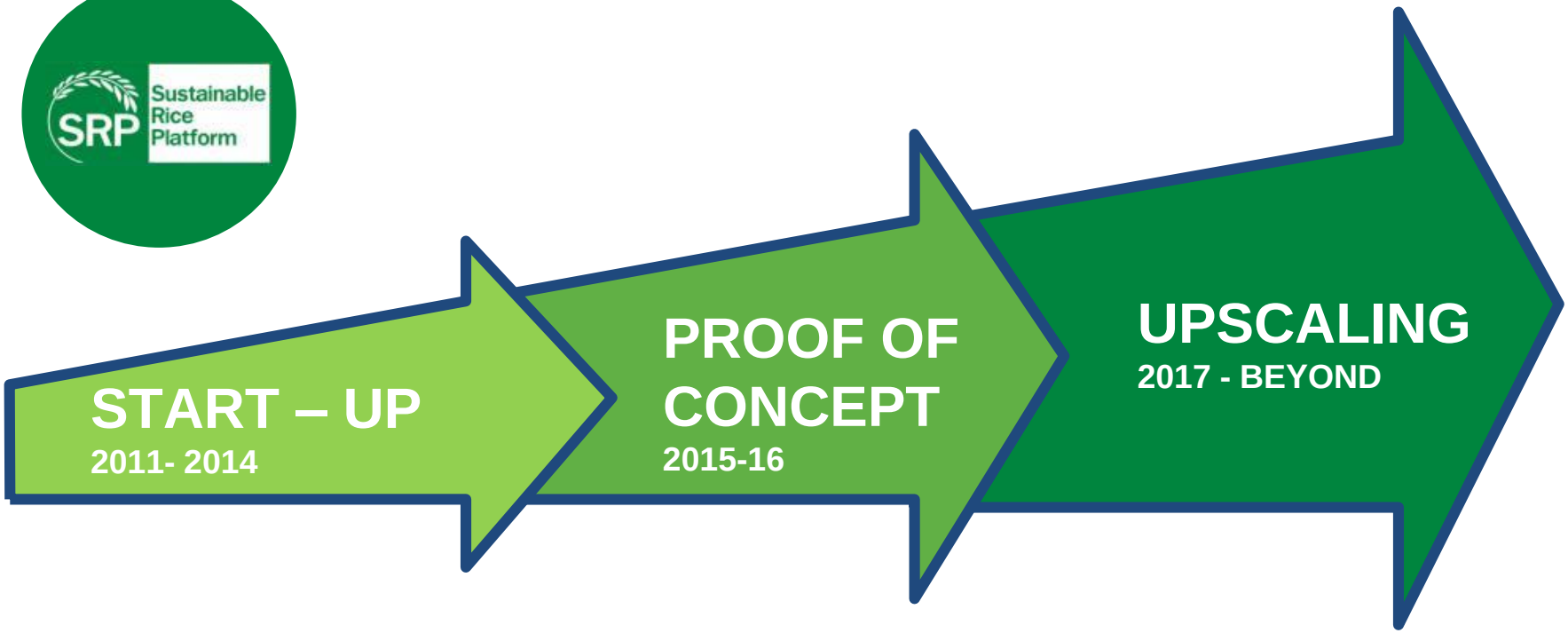
Standards (46 standards from record keeping to workers' safety)

Practices/ technologies (AWD, IPM, crop diversification, etc.)

Indicators (11 indicators from water productivity, biodiversity to GHG emission)

http://www.sustainablerice.org/

SRP Development Trajectory



Standard development

Piloting and Implementation

Rolling out:

Assurance

Upscaling

Policy dialogue

Thank you