IPNI REGIONAL REVIEW

Southeast Asia Program

Key Regional Issues

Strengths:

- Regional crops are responsive to fertilizer inputs and are globally important for fuel, food, and industrial purposes.
- Clearly defined national priorities include agricultural development.
- Agriculture makes a significant economic contribution to regional GDP.
- Forest loss and population growth require crop intensification.

Weaknesses:

- Insufficient national research capacity to support agricultural improvements.
- Lack of institutional capacity in the farming sector limits research and knowledge delivery to farmers.
- Lack of knowledge of appropriate nutrient management practices.

Opportunities:

- Agricultural development policies are encouraging innovation (e.g., Lao PDR, Myanmar, Philippines, Vietnam).
- Global deficits of maize, cassava, and cocoa production motivate increased production and yields.
- Nutrient gaps and imbalances in maize, oil palm, rice, and cocoa offer potential for rapid improvement in crop yield and quality.
- Numerous and highly inefficient smallholder producers have significant room for improvement with better access to nutrient education.
- Improving the fertilizer supply chain with better products and delivery can make significant contributions towards improved crop production.

Threats:

- Industrialization at the expense of agriculture (Malaysia) can eclipse motivation for improvement.
- Changing business environment (legislation, policies, perception) can restrict flexibility for changes in nutrient management.
- Increased intensity of climate events can undermine efforts to improve nutrient stewardship.

TACTICAL PLAN highlights & priorities

4R Stewardship

- Improved accessibility of 4R-based knowledge for high-priority crops, including oil palm, maize, cassava, and cocoa.
- Innovative communication to all levels of stakeholders through delivery of webinars, press releases, and printed media.
- Together with several IPNI member companies and business partners, 4R concepts and practices are being developed for high value crops (Black Pepper - Vietnam, Sugarcane - Philippines, and Robusta Coffee - Indonesia) that will generate sustainable income to farmers and industry alike.

Nutrient Education

- 4R training programs target oil palm producers to improve nutrient stewardship and sustain high yields.
- Expanded development of fertilizer markets for enhanced crop production in Myanmar.

Fertilizer Recommendations

- Facilitate business models to scale economically viable fertilizer recommendations in maize and cocoa to smallholder farmers.
- Build an expanding base for improved nutrient recommendations in oil palm, cassava, maize, and cocoa.

Closing Yield Gaps

- Improve the methods for reliable quantification of yield and nutrient use gaps.
- Prepare 4R nutrient management strategies and practices appropriate for estates and smallholder farms.

Enhancing Sustainability

- Consider the farm size and resource-appropriate methodology for 4R on-farm research.
- Expand field research on the intensification – sustainability nexus.
- Use of innovative 4R on-farm research methodologies embedded into commercial operations instead of being isolated on research stations.

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examples of IMPLEMENTING THE TACTICAL GOALS

Significant Partnerships:

SEAP has formed successful partnerships with Proctor & Gamble and Community Solutions International to develop supply chain-inclusive engagement models with oil palm and cocoa smallholders. A national partnership with the Philippine Department of Agriculture will bring 4R education to smallholder farmers of maize and cassava.

Educational Activities:

The IPNI program has implemented 4R Training courses for oil palm plantation managers. We are currently developing smallholder 4R curriculums for oil palm and cocoa smallholders to further spread these stewardship techniques.

Engagement in Industry:

SEAP engages with IPNI member companies and their national business partners in fertilizer market development activities. Such partnerships currently exist in Indonesia, Malaysia, and the Philippines.

Research Leading to Impact:

The IPNI program implements most of its research in commercial operations in partnership with farmers and planters to shorten the transfer pathway of innovations.

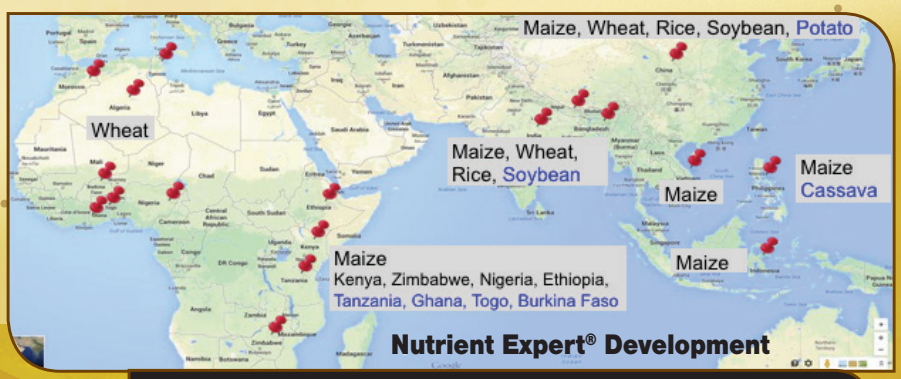
In Indonesia, for example, we evaluate nutrient management options for oil palm at the estate-scale (> 10,000 ha). In the Philippines, we are testing a supply chain integrated business model that delivers fertilizer recommendations to thousands of smallholder farmers organized in local cooperatives.

Changes in Nutrient Practices:

Fertilizer recommendations generated by Nutrient Expert®, have contributed significantly to the correction of severe nutrient imbalances in fertilizer applications to maize. Our engagement in regional cocoa production has created awareness of the benefits of proper nutrition in a crop sector that previously undervalued the need for fertilizer inputs.

Leadership in Plant Nutrition Issues:

SEAP scientists regularly advise governments and private entities in all aspects of responsible crop nutrition. We maintain publication partnerships with the Incorporated Society of Planters, and with the Agricultural Crop Trust to embed 4R Nutrient Stewardship within oil palm industry educational materials.



LEGEND: **Black:** Field-validated model. Available at software.ipni.net
Blue: Beta version under field validation

EXAMPLES OF IPNI IMPACT

Fertilizer Recommendations on the Go: The Nutrient Expert® Story

In 2004, the Southeast Asia program commenced initial funding for the necessary data collection and development of the Nutrient Expert® fertilizer recommendation model for hybrid maize. In the Philippines, SEAP engaged with national extension services in three regions. The success of this initial work persuaded the Philippine Department of Agriculture to replicate the groundwork for model development in all 16 regions of the country. The model has now been developed for use in white corn production. White corn is a critical food staple in the Philippines.

Business models, pioneered by SEAP, will support the scaling of Nutrient Expert® to other crops and regions. From initial development in Southeast Asia, Nutrient Expert® models successfully expanded first to China and India, and now to Africa. The scope of crops included in Nutrient Expert® has grown from only maize, to now include wheat, rice, and soybean. Today, SEAP is advancing beyond short-term annual crops by developing a Nutrient Expert® for cassava. If successful, development of Nutrient Expert® for perennial crops will be addressed.

The use of Nutrient Expert to provide localized recommendations on 4R Nutrient Stewardship has grown from one country growing maize in 2004 to now include 18 countries and multiple crops.

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