



Contribute to Better Rice Production and Nutrition in South East Asia

Better Rice Initiative Asia - Monthly Update



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Editor's Note

Promoting Better Rice, Better Life

To start the Detailed Preparation Phase of the Thai Rice NAMA project, BRIA's successor, the BRIA Regional Secretariat organised a preparatory Steering Committee meeting last month. The meeting sought to secure high-level political commitment from and collaboration and coordination with concerned departments under the Thai ministries of Agriculture and Cooperatives, Natural Resources and the Environment, and Finance. BRIA believes that involving all local and regional stakeholders as well as the implementing ministries right from the beginning of this phase will result in the sustainability and success of the project.

In Viet Nam, the Integrated Pest Management (IPM) training programme, co-financed by CropLife International, attempts to educate farmers as well as pesticide retailers about this ecosystem approach to crop production and protection with a goal to increase agricultural profitability while minimising environmental effects associated with pest management practices. The IPM awareness raising activities include production of image IPM videos, distribution of IPM booklets and posters, setting up of IPM farmer clubs, promoting IPM on a TV talk show as well as staging IPM events. This issue of the BRIA newsletter features the results of an internal survey based on the programme questionnaire and indicators to evaluate what has been achieved so far and show the benefits of the programme.

In the Philippines, BRIA contributed to the pilot testing of the Sustainable Rice Platform (SRP) standard in Iloilo province, in collaboration with the International Rice Research Institute (IRRI) and the Department of Agriculture (DA) Regional Field Office. According to the first SRP assessment in this country, BRIA farmers seemed to earn higher sustainability scores as they have received better extension services provided by agricultural extension workers trained in the BRIA FARMERS School's Training of Trainers (ToT). BRIA is strongly convinced that farmers can adopt and implement the SRP Standard on Sustainable Rice Cultivation in order to produce more rice for the growing Philippine population while mitigating the impacts of climate change.

To make use of the benefits offered by information and communications technology (ICT), BRIA has developed and implemented a web database system to manage farmer data in Indonesia with regard to accuracy and data privacy. This database management system (DBMS) has served as an effective and efficient working system for BRIA field coordinators and teams. BRIA will continue to improve the web database in order to support government policies on rice sector development such as crop insurance and financing facility for the agricultural sector in this country.



Suriyan Vichitlekarn, BRIA Regional Director
Kamol Taukitphaisarn, BRIA Communication



Key stakeholders at Preparatory Steering Committee meeting, Rice Department, 15 June 2017

Thai Rice NAMA – Preparatory Steering Committee Meeting



The Royal Thai Government reaffirmed its support for climate change mitigation efforts in the rice sector at a preparatory Steering Committee meeting for the Thai Rice NAMA project last month. As a successor to the BRIA project, Thai Rice NAMA will expand on these existing efforts, with a specific focus on the mitigation of methane emissions in the rice sector in Thailand. This is especially significant given that the rice sector accounts for nearly 60% of annual greenhouse gas emissions from agriculture in the country (FAO data from 2014).

A successful kick-off – Preparatory Steering Committee Meeting

The meeting brought together key stakeholders for the first time during the detailed preparation phase (DPP) of project conception, and provided an overview of project goals and structure requirements from the NAMA Facility. Steering Committee membership and the roles of the various agencies were also confirmed, with national agencies including departments under the Ministry of Agriculture and Cooperatives (MoAC), the Ministry of Natural Resources and the Environment (MoNRE), and the Ministry of Finance (MoF) leading the process. International partners include GIZ, the Sustainable Rice Platform (SRP), and the International Rice Research Institute (IRRI). OLAM International will participate as a representative of the private sector, with additional private sector agencies participating at a later stage.



Minister General Chatchai Sarikulya and other key stakeholders meet on 20 June

Further high level discussions – Minister’s meeting

Following the successful conclusion of the preparatory meeting which laid the groundwork for the first Steering Committee meeting, Minister General Chatchai Sarikulya of the MoAC called a high level meeting on 20 June to seek collaboration from the key Thai Rice NAMA agencies, as well as provide additional guidance on working processes.

The Minister further planned a media appearance for the following day, which has called national attention to the project with numerous news outlets reporting on the meeting.

A Policy Advisory Board, consisting of high representatives within the involved national ministries, has been established to discuss the key concepts underpinning the technical components, with a meeting on 4 July expected to finalise the technologies that will be implemented during the project.

Upcoming developments

Following a successful start to the official DPP process, the Thai Rice NAMA Team is currently working towards the full proposal which will be submitted to the NAMA Facility at the end of November. Upcoming meetings during this process include further Policy Advisory Board meetings, the first and second Steering Committee meetings, and working group meetings which will discuss specific project conceptual issues in smaller groups, and in greater detail.



IPM training helps Vietnamese farmers stay profitable



The Integrated Pest Management (IPM) training programme under the BRIA project, co-financed by CropLife International, have been implemented since 2015 to promote sustainable rice cultivation in Mekong River Delta, Viet Nam. Based on the contents of the training modules, a set of indicators have been identified for farmer training. The main indicators on farmers' IPM application on their field to be monitored include understanding of the action threshold levels, understanding of the mode of action to avoid pesticide resistance due to the overuse of the same active ingredients, use of personal protective equipment during spraying, and profitability. The programme

also entails training of pesticide retailers to become rice doctors and to gain their cooperation in banning illegal and counterfeit products. The programme has, so far, reached 10,701 farmers in total with 2,472 farmers trained directly and 8,229 farmers trained indirectly via 'farmer to farmer.' To scale up the impact, a live TV talk show on IPM was conducted on Hau Giang Television on 18 June 2017, the BRIA IPM Day was organised at agricultural universities/colleges attended by 384 students and 20 teachers/technicians. Moreover, IPM is being promoted at 67 IPM farmer clubs.

Results Based Monitoring from Winter-Spring Seasons 2016-2017

In order to assess the impact of the training, a sample of directly and indirectly trained farmers were interviewed with regard to their acquired IPM knowledge and the application of the recommendations provided. The samples consisted of:

| Type of farmers | Dong Thap | Hau Giang | Kien Giang | Total |
|----------------------------|-----------|-----------|------------|------------|
| Farmer group members | 49 | 55 | 50 | 154 |
| Indirectly trained farmers | 31 | 55 | 49 | 135 |
| No. result | 80 | 110 | 99 | 289 |

Farmers were interviewed by Plant Protection Sub-Department (PPSD) technical staff at the training classes. The questionnaire contained general farmer information, number of pesticide applications, knowledge of natural enemies, concept of action threshold, knowledge on biocontrol measures, concepts of resurgence, residues, and resistance, understanding of pesticide labels, safe use and finally the effects of IPM applications on farmers' income.

The following table shows in which way the number of pesticide applications has been reduced through the IPM training provided. Farmer group members reduced the number of sprays against the main pests by one third whereas recipients of knowledge imparted from farmer to farmer sprayed less by about a quarter. Though this was not representative, it indicated a certain impact on the knowledge of farmers. Observations of PPD also showed that an infestation of gall mites in the Mekong River Delta did not appear in the areas where IPM training has been provided. This also indicated that the reduction of pesticide applications turned out to be not only more economical but also more effective.

Pesticide Application

The average number of pesticide application for each pest in one season reflected the impacts of IPM training on practices for both directly and indirectly trained farmers.

| Pest | Direct | | Indirect | |
|--------------------|------------|------------|-------------|------------|
| | Before IPM | After IPM | Before IPM | After IPM |
| Weed | 1.5 | 1.1 | 1.5 | 1.3 |
| Golden apple snail | 0.9 | 0.7 | 1.0 | 0.9 |
| Rodents | 0.8 | 0.6 | 0.8 | 0.7 |
| Insects/Mites | 3.2 | 1.3 | 3.3 | 2.0 |
| Diseases | 4.6 | 3.4 | 4.7 | 3.7 |
| Total | 9.2 | 6.0 | 10.3 | 7.5 |

With regard to the knowledge of natural enemies (NE), 89% of farmer group members know up to 3 of the most common beneficial ones while this ratio is only 47% for the indirectly trained farmers. Up to 5 beneficial enemies are known by 26% of farmer group members but only by 4% of the indirectly trained farmers. The NE mostly known by farmers are shown in the following table.

Natural Enemies Recognition

| Type of Natural Enemies (NE) | Direct | Indirect |
|------------------------------|--------|----------|
| Spider | 87% | 80% |
| Lady bug | 63% | 50% |
| Wasps | 62% | 26% |
| Paederus | 59% | 42% |
| Mirid bug | 33% | 20% |
| Water bug | 29% | 14% |

The concept of action threshold for Brown Plant Hopper (BPH) was understood by more than 80% of farmer group members as well as over two thirds of indirectly trained farmers. About a quarter of farmers apply biological control with Emamectin benzoate and Abamectin the mostly used. For preventing resurgence, farmers mostly do not apply defoliator insecticide in the first 40 days, use only pesticides when needed and apply the correct dosage. The preferred measures for preventing residues are: no pesticide sprayed 14 days before harvest, keeping the pre-harvest interval (PHI) by selecting products with a short PHI, and using registered products for rice only. For preventing resistance, most of the farmers rotate the active ingredient (AI) within the season and also between two seasons, limit the number of spraying, do not spray for a preventive purpose and follow the concept of action threshold.

It is of utmost importance that farmers can read and understand the labels of the abundant chemical products in the market. The below table shows that the IPM training provides important information to farmers in order to distinguish the different products, to understand the concepts of AI and PHI, target pests, and last but not least, important instructions for the safe use and first aid in the case of intoxication.

Understand Pesticide Label

| Information on labels | Farmer Groups | Farmer to Farmer |
|-------------------------------|---------------|------------------|
| Trade name | 99% | 96% |
| Production & expiry date | 96% | 90% |
| Pre-harvest Interval (PHI) | 96% | 93% |
| Concentration and application | 95% | 94% |
| Active Ingredient (AI) | 89% | 68% |
| Target pest | 88% | 88% |
| Colour band | 82% | 59% |
| Concentration | 79% | 67% |
| First aid notice | 78% | 71% |
| Formulation | 75% | 59% |
| Safety Pictogram | 73% | 61% |
| Cautionary notice | 68% | 52% |



Although the training tries to motivate farmers to protect themselves before, during and after spraying, not all recommendations given are being applied by farmers. This refers mostly to the mode of spraying, when farmers are still walking into their own spray (“rainbowing”). Wearing personal protective equipment (PPE) is extremely necessary in order to protect the health of the persons who are exposed to the toxic substances. PPE regularly used by farmers is shown in the following table:

PPE used →

| PPE | Mixing pesticides | | Spraying pesticides | |
|-------------------|-------------------|------------------|---------------------|------------------|
| | Farmer Groups | Farmer to Farmer | Farmer Groups | Farmer to Farmer |
| hat | 85% | 91% | 98% | 99% |
| vizor | 35% | 32% | 48% | 46% |
| apron | 9% | 8% | 26% | 16% |
| gloves | 49% | 39% | 50% | 34% |
| long sleeve shirt | 80% | 80% | 97% | 93% |
| boots | 11% | 6% | 26% | 12% |
| Cotton mask | 84% | 75% | 87% | 77% |

As shown in the table below, IPM application has a direct effect on farmers' income. Maintaining the level of yields and prices but reducing the quantities of seeds and fertilisers and less pesticide applications lead to up to 15% lower production costs. External positive effects of IPM application include e.g. less environmental pollution and less emission of greenhouse gases.

Gross
Margin
Calculation

| Descriptions | Farmer Groups | | | Farmer to Farmer | | |
|-------------------------|-------------------|-------------------|-------------|-------------------|-------------------|-------------|
| | Before IPM | After IPM | Changed | Before IPM | After IPM | Changed |
| Land Preparation | 1,269,195 | 1,261,848 | -1% | 1,216,031 | 1,198,185 | -1% |
| Irrigation | 731,973 | 717,980 | -2% | 701,062 | 690,177 | -2% |
| Sowing | 339,181 | 329,966 | -3% | 318,715 | 319,485 | 0% |
| Weeding | 311,054 | 276,738 | -11% | 294,400 | 264,785 | -10% |
| Fertilisation, spraying | 1,509,830 | 1,183,837 | -22% | 1,668,545 | 1,358,535 | -19% |
| Other labour | 890,211 | 785,245 | -12% | 758,869 | 730,292 | -4% |
| Harvest | 2,157,109 | 2,149,928 | 0% | 2,139,303 | 2,102,227 | -2% |
| Seed | 2,299,242 | 1,736,570 | -24% | 2,394,681 | 1,967,127 | -18% |
| Fertiliser | 3,967,642 | 3,391,322 | -15% | 4,129,542 | 3,611,672 | -13% |
| Pest Control | 3,092,490 | 2,303,113 | -26% | 3,239,966 | 2,631,332 | -19% |
| Total Expense | 16,567,928 | 14,136,548 | -15% | 16,861,113 | 14,873,816 | -12% |
| Yield | 6,896 | 6,871 | 0% | 6,919 | 6,874 | -1% |
| Paddy Price | 5,013 | 5,126 | 2% | 5,031 | 5,141 | 2% |
| Revenue | 34,569,428 | 35,225,708 | 2% | 34,810,808 | 35,334,758 | 2% |
| Gross Margin | 18,001,500 | 21,089,160 | 17% | 17,949,695 | 20,460,942 | 14% |

The final monitoring and evaluation of the project activities will be carried out in the third quarter by CropLife in collaboration with the partner organisations and BRIA.



World's first sustainability standard for rice pilot-tested in the Philippines

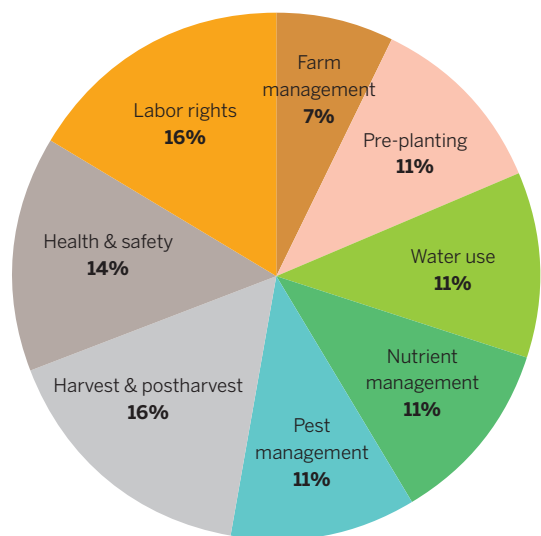


The Philippines has joined the pilot testing of the Sustainable Rice Platform, the world's first sustainability standard for rice. Initiated by the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) under the Better Rice Initiative Asia (BRIA) project, this effort has been implemented with the International Rice Research Institute (IRRI) and the Department of Agriculture (DA) Regional Field Office in Western Visayas as part of the global effort to field test the SRP standard in different rice ecosystems.

Developed by IRRI and the United Nations Environmental Programme (UNEP), the SRP promotes sustainable farming practices as a sustainability standard for rice cultivation. Overall, the standard covers eight thematic areas from pre-planting to post-harvest, including labour rights and health and food safety.

Based on the standard, a scoring system was developed as a tool to assess whether a farm is sustainable or working towards its sustainability. The score, which ranges from zero to 100, may be obtained based on the checks a farmer may earn against the 48 good farming practices. To say that rice cultivation is sustainable when a farmer earns at least 90 out of 100.

The SRP Standard for Sustainable Rice Cultivation: 8 themes, 46 requirements



The SRP Standard: theme weighting



Field testing of SRP

The field testing kicked off with a training workshop for field agronomists who were subsequently employed in the field to interview farmers. Organised by GIZ and the DA, the training was facilitated by Mr. Joel Janiya, IRRI's Senior Associate Scientist and SRP expert, to get the field agronomists familiarised with the SRP standard and to learn the tools to collect and aggregate SRP data. The field agronomists were composed of agricultural extension workers, local farmer technicians, local BRIA coordinators, and DA RFO6 staff.

Next, the field interviews were piloted in four municipalities in Iloilo province: three BRIA-FARMERS sites where the local extension has strengthened through a GIZ grant; and one adjacent town with no extension support from GIZ.

In the BRIA-FARMERS sites, farmers have received more extension services with AEWs (agricultural extension workers) trained in the FARMERS School's Training of Trainers (ToTs). With the GIZ grant, the AEWs have mainstreamed their learnings via the local extension programmes, such as BRIA School Days and Farmer Field Schools (FFS), to name a few. Meanwhile, the DA RFO6 has provided seeds, fertilisers and crop protection products to farm associations whose farmer members are both involved in the SRP field testing and the agency's compact demos.

| | Average Score | High | Low |
|-------------------|---------------|------|------|
| Leganes | | | |
| Score on standard | 70.4 | 85.6 | 46.0 |
| Missed Thresholds | 7.5 | 17 | 3 |
| Pototan | | | |
| Score on standard | 67.7 | 78.0 | 49.5 |
| Missed Thresholds | 7.6 | 12 | 3 |
| San Miguel | | | |
| Score on standard | 64.1 | 78.0 | 42.1 |
| Missed Thresholds | 9.2 | 16 | 5 |
| Zaraga | | | |
| Score on standard | 75.7 | 88.6 | 54.3 |
| Missed Thresholds | 5.2 | 12 | 1 |

Rice science for a better world



Sustainability scores of farmers

How many checks did the farmers get with the fist SRP assessment? Results show that farmers interviewed during the wet season (April to September 2016)) scored an average of 68 points. Farmers obtained higher scores in pest management and post-harvest while they posted lowest in food safety and labour rights.

Farmers in Leganes and Zaraga, both sites of BRIA-FARMERS, earned higher scores with an average of 70.4 and 75.7, respectively. The town of San Miguel, which is a not a site of BRIA-FARMERS, has the lowest average score of 64.1.

The sustainability scores of the farmers have revealed where they stand in the SRP standard. By knowing about it helps programme planners in the rice sector to fine-tune ongoing programmes to target the areas where the farmers need to be strengthened. It can also provide a reliable basis to develop tailored capacity building programmes, factoring in the areas for interventions towards helping farmers make his or her rice farm sustainable.

So, what is next?

An ongoing activity has been carried out in the wet season of June to October 2017 to understand and compare any differences or similarities of the sustainability scores of farmers in both seasons. BRIA and the four sites have identified gaps that will be addressed during this wet season. The scores will be calculated at the end of each cropping season.

Promoting the SRP as a sustainability standard for rice is a workable approach that farmers can adopt in their farms to sustainably make rice cultivation productive and environment-friendly. As growing rice is both a culprit of and vulnerable to the threats of climate change, sustainability is the only way to go to mitigate the effect of climate change and sustainably produce enough food for the ever-growing population.

Contributed by Jaime Gallentes



Web farmer database contributes to efficient project implementation in Indonesia



In today's world, information and communications technology (ICT) is widely applied for an effective and efficient working system, and data accuracy and privacy. A database management system (DBMS) is commonly used as a professional and scalable management system. To embrace a paperless work culture as well, BRIA Indonesia has been collecting and managing data of farmers participating in the BRIA programme with the BRIA database application system to avoid data repetition and manual data entry errors since 2015.

A database is a set of data arranged to be mutually related to each other so as to facilitate users in managing it. Compared with the conventional method of administration, the database is like a collection of interconnected files, tables, or archives electronically stored, rather than kept in a cabinet with various risks of losing or corrupting data, searching difficulty, wasting time and money. The database system has overcome all that. Besides the advantage of saving paper, many other benefits of database application include (1) speed and convenience, (2) shared usage, (3) centralised data control, (4) cost saving, (5) data security, and (6) ease of improvement.

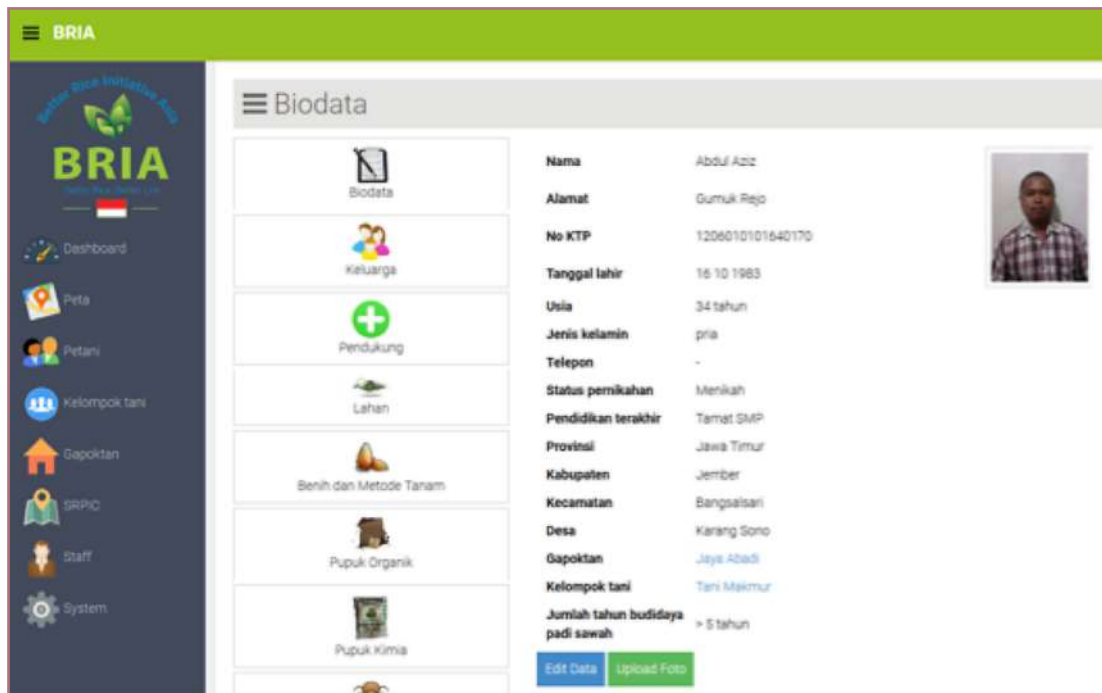


Figure 1: A screenshot of farmer's personal data

The BRIA database system has eliminated desk piles of paper and complex manual work. Before the start of Farmer Field School (FFS), a preliminary collection of basic data was required for each district. Verified by BRIA lead coordinators, the FFS basic data were entered by a responsible IT administrator into the system. That was the initial process of building up the database as well as proof of registration of every new FFS class.

Then, each farmer was asked at least 84 questions regarding his/her personal data and existing farming practices. A BRIA coordinator responsible for this data collection uses a BRIA mobile surveyor application. Each coordinator is equipped with an android tablet and a GPS to record farmers' planting sites. The prime feature of the app is the accuracy in showing geographic coordinates, an important requirement to gain access to financial services.

Farmers' data were recorded offline on the app during FFS activities. To synchronize the data collected from the field online with the system requires internet connection. Once synchronized, all farmers' data are stored in a cloud system. For data delivery, data of 5 to 10 farmers are gradually processed at a time to prevent network overload resulting in incomplete data transfer. Consequently, the IT administrator can control the data in the system and easily verify and change each farmer's data to support the field team promptly.

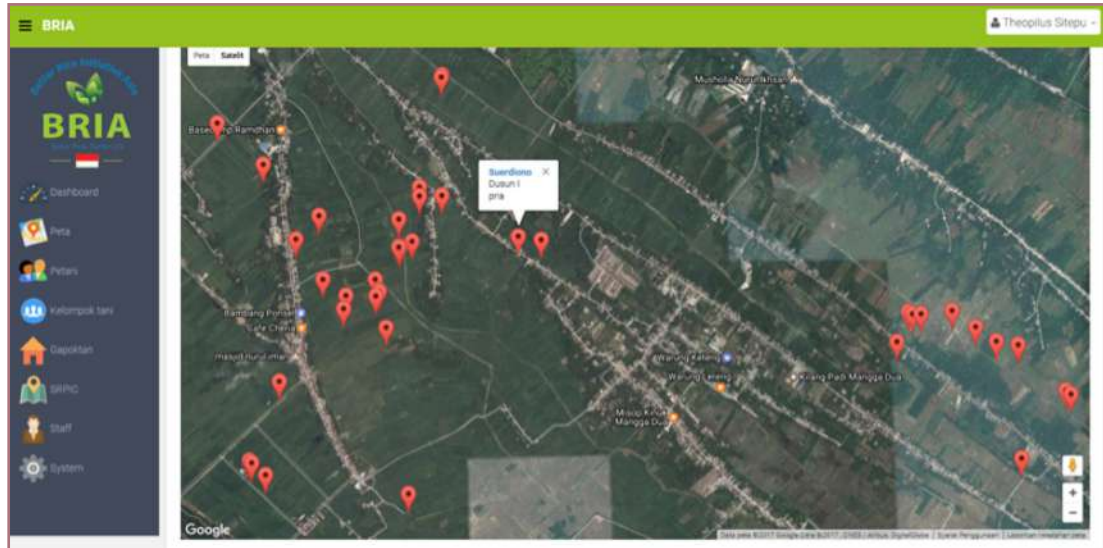


Figure 2: Farmers' rice field location is accurately identified with GPS coordinates.

An important final step was to record coordinate points of farmers' rice field which were measured separately with GPS. Once verified, the coordinate data were input by the IT administrator into the system. So, within the BRIA database system, the data input and upload process continues for thousands of BRIA farmers.

“The BRIA app has provided us with an advanced tool for data collection. We do not need to bring bags of paper around the villages, wasting our energy to write down every single detail or even rewrite it if there are mistakes. The BRIA app contains the data directly input into and retrieved from the system for convenience and accuracy,” commented Dina Arsyi Fajrin, one of BRIA field coordinators in Deli Serdang, North Sumatra, about the advantages of using the BRIA database management system.



Figure 3: Printed materials for farmer data collection in the old fashioned way

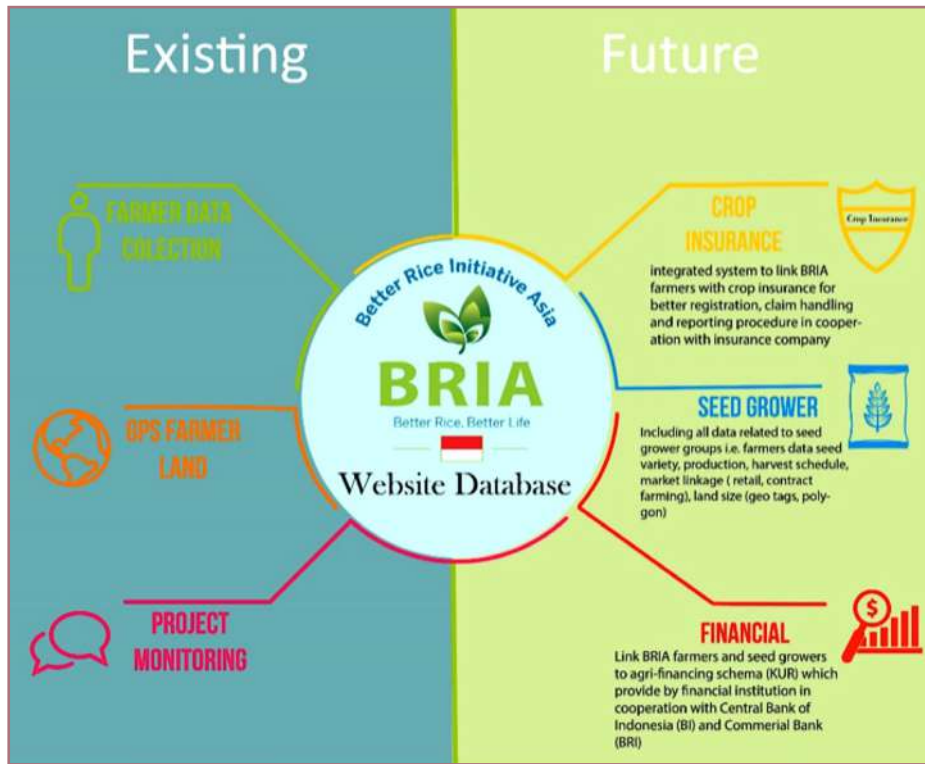


Figure 4: BRIA web database improvement in the near future

Technology is created to facilitate and simplify the work for humans. The purpose of technology is a never ending process of improvement. Therefore, the BRIA web database will continue to be improved in order to support government policies on rice sector development such as crop insurance and financing facility for the agricultural sector.

Contributed by: Yulia Indawardhani Lubis
Photo Credit: BRIA Indonesia



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