Photo: Farmer Sittipong Yanaso at his durian farm. Credit: CCDKM.
图片：图为农民Sittipong Yanaso和他的榴莲农场。图片来源：信息与发展知识管理中心（CCDKM）

‘Smart Farms’ Making Thai Agriculture Sufficient and Sustainable

By Kalinga Seneviratne
‘智慧农场’推动泰国农业的供给充足和可持续发展
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CHANTHABURI, Thailand (IDN) – Thai farmers are going back to basics under a “Smart Farms” formula supported by modern information communication technology (ICT) integrated into a Buddhist concept of ‘sufficiency economy’ to make the kingdom’s lifeblood – agriculture and its small-scale farmers – sustainable into the foreseeable future.

泰国，IDN记者尖竹汶府报道 - 把现代信息通讯技术与佛教经典中的“自给自足”这一理念相融合，技术的进步为“智慧农场”的实现提供了良方。泰国政府希望在可预见的未来让“智慧农场”为泰国农业以及小规模农户的可持续发展提供动力。在“智慧农场”的帮助和指导下，泰国农民正让农业回归本色。

“Some farmers use chemical fertiliser to get more fruits [from their trees] (but) their trunks die in three to five years. We use organic fertiliser here and our trunks will last for 30 years” said farmer Sittipong Yanaso, speaking to IDN at his lush multi-cropping durian plantation here. (P44)

农民Sittipong Yanaso在他的多熟复种榴莲种植园中对IDN记者说：“一些农民为了扩大产量，给果树使用化学肥料。过量的化肥使得果树在3-5年之内就会死去。然而，我们在这里使用的是有机肥料，我们的果树也因此能存活30年之久。”

“We get enough dry leaves for our fertiliser,” he added, pointing to the green mountains surrounding his plantation. Showing the banana plants growing in between his durian trees, he explained that the trunks are used after harvesting the fruits, a technique that has been handed down from ancestors.

他的榴莲种植园被群山环绕。Sittipong Yanaso手指着周围葱绿的山林补充说："从这些山林中，我们能够获取足够的干树叶用来制作我们的有机肥料。" 接着，他向我们展示了夹在榴莲树中间生长的香蕉树，Sittipong Yanaso解释说，收获完香蕉之后他们会利用一种祖上传下来的特殊技法把香蕉树树杆制作成有机肥来使用。

Sittipong's durian plantation also has banana, papaya, rabuttan, mangostean, pepper, coconut and longon plants, which serve to give him an income in between his durian harvests. Recently he has planted some coffee and has a small area of rubber trees that adds to his income. He has also planted bamboo as wind-breakers and the tall bamboo tree trunks provide him material as support for banana trees (when fruits bloom) as well as for picking fruits.

除了榴莲，Sittipong在他的农场里还种植了香蕉，番木瓜，红毛丹, 山竹, 辣椒，椰子和桂圆。这些作物能够在非榴莲收获季节给他带来一定的收入。最近，他还增加种植了一些咖啡以及一小片橡胶树，这也将使他增收。不仅如此，他还种了一些竹子用来防风。高而长的竹竿不仅可以在香蕉收获季节用来支撑香蕉树树干，还可以做成采摘高处果实的工具。

"This is a very mindful orchard," argues Professor Kamolrat Intaratat, Director of the Centre of Communication and Development Knowledge Management (CCDKM), whose organisation has assisted Sittipong in adopting ICTs to improve his knowledge of organic farming and marketing.

通信与发展知识管理中心（CCDKM）负责人Kamolrat Intaratat教授评论说："这是一个经过缜密规划而建立的果园。"Sittipong在通信与发展知识管理中心（CCDKM）的帮助下导入了信息通讯技术从而加深了他对有机农场和产业营销知识的理解。

“The philosophy of CCDKM is that we work with conceptual base integration and a partnership model, working with marginal people,” explained Kamolrat, after accompanying IDN on a tour of the farm. “Most important is to create income generating projects… the majority of Thais are small farmers, so we look at how to use ICT to facilitate smart farming in Thailand.”

在陪同IDN记者游览完农场后，Kamolrat解释道：“通信与发展知识管理中心（CCDKM）的哲学理念是: 同边缘人群一道，利用合作伙伴制，以概念整合为基础开展工作。”他还补充说，“最重要的一点是创造增收项目。泰国的主流群体是小规模农户，所以我们重点关注的是如何运用信息通讯科技来促进泰国智慧农业的发展。”

Kamolrat went on to explain that farmers are trained in ICT literacy and how to access information. “After that we train how to analyse this information (to know) the price of the farm product, and they gain access to many farm pricing [models] … from the government, private and export markets. Farmers can then decide what is the best price for them to sell the product.”

Kamolrat继续解释说农民会接受信息通讯技术相关培训，并知晓如何运用技术获取所需信息。“在这之后，我们会进一步对农民进行培训，使他们学会如何分析到手信息以弄清农产品的价格。不仅如此，他们还能够利用政府，私企和出口市场等多种渠道的农场定价模型来决定最佳售价，从而更好地销售他们的农产品。”

“We show how ICTs can be used with the organic ecological farming systems … Smart farming is not only about ICTs, but also mindset and innovative processes in managing their farms.”

“我们会向农民展示怎样在有机生态农业系统中融入并利用现代信息通讯技术。智慧农业所指的不仅仅是现代信息通讯技术领域的创新，它还应该包括思想意识以及管理操作流程等方面的创新。”

At the end of 2015, around 35 percent of the Thai workforce was engaged in agriculture, mainly as small-scale rural farmers. To safeguard Thailand’s rural farmers and make their livelihood sustainable, the Thai government has introduced many programmes in recent years under the philosophy of ‘sufficiency economics’, which was first mooted by the late King Bhumibol Adulyadej in 1998, when the kingdom faced a grave economic crisis.

截止到2015年末，泰国大概有35%的劳动人口从事与农业相关的工作。这其中，最主要的就是乡村地区的小规模农户。为了确保泰国乡村地区农民的就业与生活质量并使他们的生活实现可持续发展，泰国政府近几年来在“农业充足经济学”的哲学理念指导下出台了许多相关的政策及项目。这其中的第一个项目就是由先王Bhumibol Adulyadej于1998年泰国遭遇严重的经济危机时所提出的。

Drawing on Thailand’s deep Buddhist tradition, this concept emphasises the ‘middle way’ – the importance of balance. Both sustainability and sufficiency are at the core of this philosophy, with human development as its principle aim. Sharing (knowledge and resources) rather than competition and exploitation are important aspects of this system.

这套系统的设计借鉴了泰国深厚的佛教传统。泰国佛教强调“中庸”的概念，也就是强调相互平衡的重要性。以人类发展为宗旨的可持续与农业充足供给是其哲学理念的内核。因此，共享知识和资源，而不是去竞争与压榨成为了该系统所要着重强调的一个方面。

The Thai government has thus been promoting the formation of area-specific farmers' cooperatives using notions are similar to the 'risk management' and 'stakeholder' philosophy in Western economics which came into prominence in the 1990s.

泰国政府在积极推进形成针对特定地区的农户协作组织，并把90年代风靡于西方经济学的"风险管理"，"利益相关人"等概念引入到这种合作组织中。

To improve the livelihood sustainability of the rural sector, the Thai government has laid out a number of measures under this philosophy, such as loans through village funds and village development programmes for the improvement of people's livelihood through Pracharat grassroots projects.

为了提高乡村地区人民生活的可持续性发展，泰国政府在合作共赢哲学理念的指导下开展了一系列民生项目。例如，乡村基金贷款项目和以提高人民生活质量为目的的乡村发展项目 - 基层民众计划。

One of the campaigns under the Pracharat ("state of the people") approach is a scheme developed with Kasetsart University and the Thai Chamber of Commerce to develop the "Thai GAP" standard, which is a system for fruit and vegetable safety according to good agricultural practices (GAP), which takes into consideration the quality of land management, soil, seedlings, water management, fertilising, pest management, consumer safety and environmental protection.

基层民众计划项目的活动标语之一是提出和发展"泰国GAP"标准，以这一标准由泰国农业大学和泰国商会提出，以优良农业实践标准（GAP）来衡量蔬菜瓜果的安全质量。同

时，他们把土地土壤管理，幼苗及虫害管理，水源肥料管理，消费者安全及环境保护等理念都融入到了这一标准系统的设计中。

Once certified by Thai GAP, producers will receive their own QR Code so that smartphone users (consumers) can find information about the product. This initiative is a way of uplifting the farming sector into the digital era where consumers who want healthy products can reach farmers directly.

农户一旦得到了泰国GAP认证，他们就会有一个专属于这个农户的二维码。这样一来，智能手机用户（消费者）就能够找到跟农户出产的农产品相关的生产信息。这一计划旨在升级农村产业，通过农业和数字时代的有机融合让那些想要吃到健康农产品的消费者有机会直接与农户进行沟通。

CCDKM has been working with 'Smart Farmers' to gain this GAP certification and Sittipong's farm is one of those that have achieved this status. "For most of the GAP (certified) farmers, their produce is not enough for the demand because people are now very concerned about their health," said Kamolrat. However, "durain and banana in this farm have pre-orders … right now the durian orchard is already booked three months in advance."

通信与发展知识管理中心（CCDKM）的目标之一就是同"智慧农民"一道工作以帮助他们获取GAP认证。Sittipong的农场就已经取得这一认证。"对绝大多数GAP农民而言，他们所生产的农产品在市场上供不应求，因为现在人们越来越注重自己的健康，"Kamolrat说。然而，"这个农场里的榴莲和香蕉都接受预定单，目前，我们的榴莲果园在三个月以前就已经被预定了。"

“Our farm is very self-sufficient. Right now the demand is so much we can’t satisfy all,” confirms Sittipong’s wife Narisara. She explained that the farm’s sufficiency is achieved through maximising family labour that includes her daughter and son-in-law.

“我们的农场自给十分充足。目前，市场对我们农产品的需求量很大，我们无法满足所有需求。”Sittipong的妻子Narisara确认说。她还解释农场充足的产量是通过最大化利用家庭劳动力实现的，其中就包括了她的女儿和女婿。

“We don’t use outside labour. We plan our farm well,” she added, showing her banana plantations where “we get a regular income (in between durian harvests) because we space out planting.”

“我们不使用外部劳动力。我们能够很好地管理农场”， 她一边向我们展示她的香蕉种植园，一边补充说，“轮作种植使我们在非榴莲收获季也有了日常基本收入。”

She also added that the use of ICTs has helped the family to market its produce profitably and obtain a higher price for its fruits, especially supermarkets buying its bananas at a premium price “given that GAP certification indicates it is export quality.”

她还补充说，信息通讯技术不仅更好地帮助了他们实现农产品在市场上的营销，还让他们的水果能够以更高的价格在市场上出售，从而增加了利润空间。尤其是大型超市会以更高的价格购买他们出产的香蕉，因为GAP认证表明了产品是达到出口标准的优质产品。

Sittipong told IDN that he is able to keep his income from the durain harvest “in the bank” because he obtains a substantial income from others crops such as banana, pepper and coconut spread throughout the year.

Sittipong告诉IDN记者因为轮作种植，他全年可以依据不同的季节种植香蕉，辣椒和椰子。他已经能够从这些轮种作物中获取足够的收入以支持日常开支。因此，榴莲收获季节所取得的收入就可以全部存入银行了。

Sittipong has now become an e-agriculture evangelist in the region, converting other farmers to the sufficiency and sustainable philosophy of organic farming. He points out that even if you buy fertiliser from outside, organic fertiliser costs one-third of its chemical counterpart, so that when other farmers visit his farm and observe his comfortable lifestyle, it is not difficult to be converted.

Sittipong已经成为了该地区电子农业的传播者，他尝试着传播有机农业所倡导的农业自足和可持续发展的哲学理念，使该地区的其他农户朝着“智慧农民”方向转变。他指出，就算你从外部购买有机肥料，其价格成本也只有化学肥料的三分之一。所以，当其他农民参观了他的农场，了解了他舒适的生活方式后，就更容易接受这一转变。

“This is a pilot farm to tell others that even if you have a husband and wife team, you can do your own farm,” said Kamolrat. “What is important is to plan your crop all the time.”

“这片农场就是’智慧农场’的开拓者，它告诉人们即使是夫妻二人的小型团队也有能力经营好自己的农场。”Kamolrat继续说：“重要的是让你的农场在一年四季都能轮作，种植与季节相适应的作物。”

Meanwhile, the Thai government has begun to spread its sufficiency economics development philosophy overseas. When Thailand took the chair of the Group of 77 developing countries in January 2016, Foreign Minister Don Pramudwinai told member states that the 'sufficiency economics' model on holistic farm management could be adopted by most of them to achieve all the 17 Sustainable Development Goals (SDGs).

同时，泰国政府已经开始把农业的充足供给经济发展哲学理念向海外推广。在2016年1月，泰国当选发展中国家77国集团轮值主席国之际，外交部长Don Pramudwinai告诉各成员国应该把"充足供给经济"模型在综合农场管理上的运用推广到各个发展中国家，以实现联合国17个可持续发展目标（SDGs）。

He pointed out that this philosophy is at the core of SDG 12 which calls for reasonable consumption and production, and its ability to provide food security aligns well with SDG 1 on eliminating poverty and SDG 2 on eliminating hunger. [IDN-InDepthNews – 28 January 2018]

他指出这样的哲学理念与联合国可持续发展的第12项目标 - "确保可持续消费和生产模式"相契合。同时，这种农业经济发展模式为食品安全提供了保障，这也与联合国可持续发展的第一个目标 - "在世界各地消除一切形式的贫穷"以及第二个目标 - "消除饥饿，实现粮食安全，改善营养和促进可持续农业"不谋而合。

* *IDN would like to acknowledge the assistance of Professor Kamolrat Intaratat and CCDKM for facilitating the visit to the 'Smart Farm'.*

* *IDN*在此鸣谢Kamolrat Intaratat教授和通信与发展知识管理中心（CCDKM）为记者参观“智慧农场”所提供的各种帮助与协作。

Photo: Farmer Sittipong Yanaso at his durian farm. Credit: CCDKM.
图片：图为农民Sittipong Yanaso和他的榴莲农场。图片来源：信息与发展知识管理中心（CCDKM）

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