

AGRICULTURAL MECHANIZATION POLICY AND SUSTAINABLE AGRICULTURAL TECHNOLOGY INOVATIONS

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THAILAND

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Thailand's international agriculture strategies for 2012-2016 focus on creating confidence in Thai agricultural products and food in order to strengthen the country's farm sector on a sustainable basis.

The strategies were approved by the Cabinet, during its meeting on 13 March 2012, following a proposal by the Ministry of Agriculture and Cooperatives.

They seek to enhance the competitiveness of Thailand's agricultural and food businesses, develop the quality of Thai food and other agricultural products for both traditional and emerging markets, and promote cooperation with the international community under various cooperative frameworks.

During the five-year period, the Ministry of Agriculture and Cooperatives will prepare for holding international negotiations to ease the problem of protectionist measures imposed by foreign countries.

It will also step up public relations campaigns to promote Thailand's agricultural commodity and food standards and make them better known in the international market.

In order to develop international cooperation with foreign countries, the Ministry will work in partnership with international organizations for research and development, as well as technology transfer.

It reported to the Cabinet that the five-year strategies are in line with the Government's policies presented in the National Assembly in August 2011.

According to the policies, the Government will expand the role of agricultural and food businesses, which have long been Thailand's national income and employment sources.

The objective is to develop Thailand as a center for food trade and food production of high quality in order to meet the demand of consumers with high income and unique preferences.

Moreover, the Government will strive to develop Thailand to be the center of future markets for such agricultural commodities as rice, sugar, and tapioca. The move will help accelerate the country's ambitious project to turn Thailand into the "Kitchen of the World."

Regarding the agricultural sector, the Government will increase crop productivity through research and development on crop strain improvement, develop production technology, and transfer research knowledge to farmers, so that they can use crop strains and technologies that are appropriate to local conditions.

It will also develop value-added agro-industries to increase Thailand's competitiveness in the world market.

Efforts will be made to upgrade the quality of Thai agricultural goods, so that they will gain greater recognition in foreign markets.

Apart from expediting negotiations on various agreements concerning Thailand's agricultural commodity and food standards, the Government will boost Thailand as the Kitchen of the World, in terms of agricultural products, food, and the country's agricultural investment overseas.

Thailand will base its future development on knowledge, technology and innovation. Research and development anchored in science and technology are major driving forces of the country's future. They have led to a restructuring of the production system from using natural resources, capital and labor with low productivity to an emphasis on knowledge, science and technology with high productivity. A knowledge-based society is a driving force and a key to resilience for Thailand in the worldwide arena.

In Thailand there is a need for capacity building of farmers and operators for efficient use of agricultural machinery as following.

Impart knowledge for using and repair and maintenance of agricultural machinery to farmer: Various agricultural machinery are being used for various crops production. Increase knowledge on using and repair and maintenance will increase usage efficiency of agricultural machine, reduce cost of repair and maintenance, and extend life of machine.

Extend knowledge and training for operators of big size, high price and high performance agricultural machinery: Trend of using these machines for crops production in Thailand is increasing viz. rice combine harvester, sugarcane harvester etc. High skilled operators are required to maximize utilization efficiency of these machines. This will result in good quality of work done, decreasing repair and maintenance cost and thereby reduce cost for custom service may be possible.

Introducing appropriated agricultural machinery to farmers: There are various types and sizes of agricultural machinery in use which are mostly used in the Central plain region. Introducing these machinery to those areas which are currently not using them will boost the mechanization in other regions of Thailand.

Supporting custom service system of agricultural machinery: Agricultural machinery in custom service is popularly used in Thai crop production. The advantages are: increased utilization of machine; reduced fixed cost for holding machine; option to use high performance machine for increasing production efficiency; and relax the problem of labor shortage. This is practiced intensively in the Central, as compared to the North and the Northeast, which have low competition causing high hiring rate and increased cost of production. Therefore, the promotion of custom service for agricultural machinery should be practiced.

The national plans should be prepared to deal with problems caused by climate change. Research and development, innovation on greenhouse gas reduction, and preparation for greenhouse effects should be encouraged. Local communities should be better prepared for natural disasters and climate change. Resilience to meet the global warming crisis should be created.

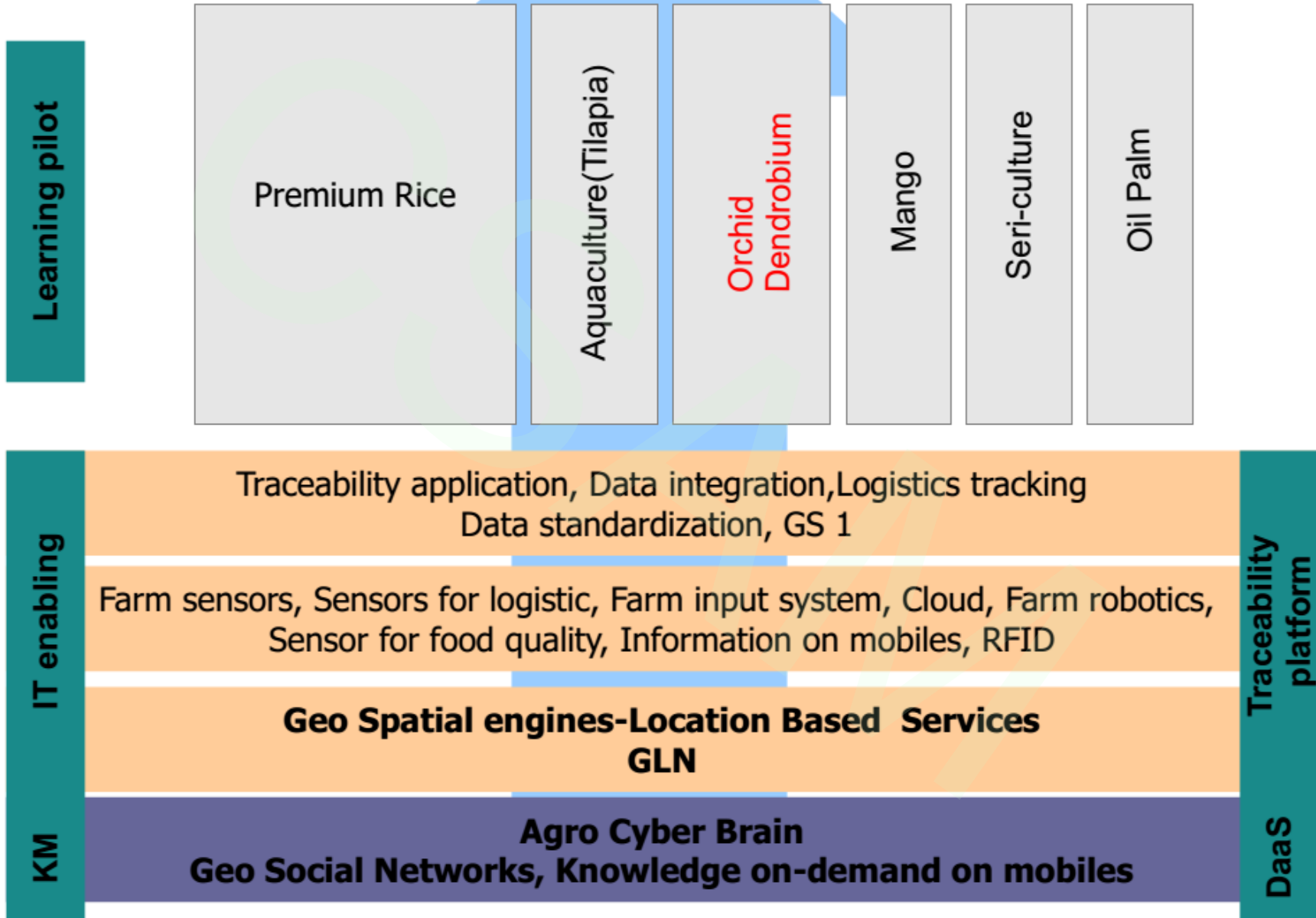
The country should prepare to encounter climate change and natural disasters. Thailand will play a greater role in global forums and be able to manage international trade while observing environmental obligations. Thailand has utilized more crops for bioenergy production. Demand for these crops, such as sugar cane, tapioca and oil palm, has significantly increased. Therefore, farmers have tended to convert their farms from food to energy crops.

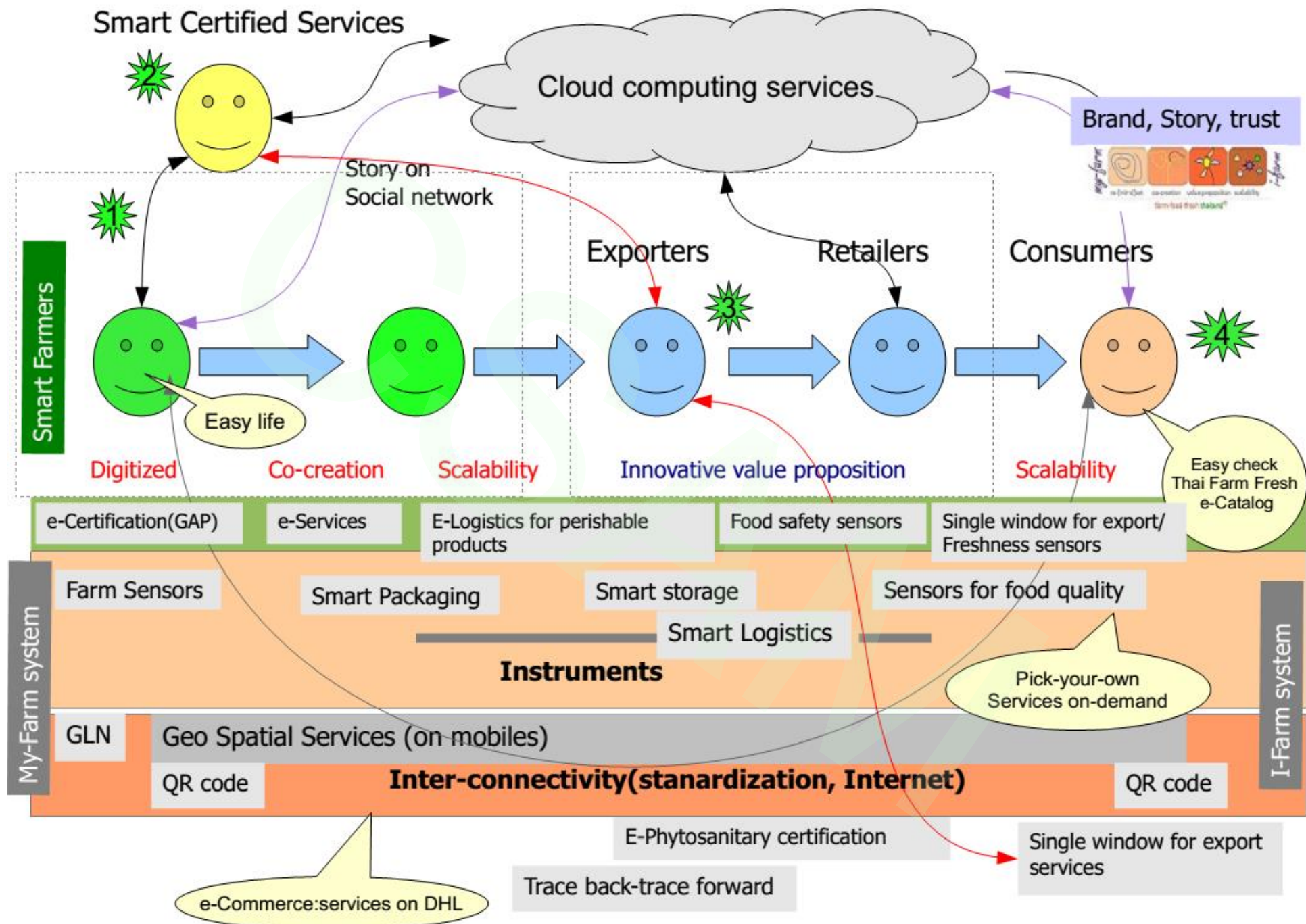
Governmental policy has also promoted ethanol and biodiesel production in order to reduce imports of fossil fuels. The Renewable Energy Development Plan also aims to increase the level of ethanol in benzene by at least 9 million liters per day by 2022, and by at least 4.5 million liters per day in biodiesel. Compare this to the current ethanol and biodiesel consumption of approximately 1.2 and 1.7 million liters per day. Therefore, the trend is for food supply production to decrease.

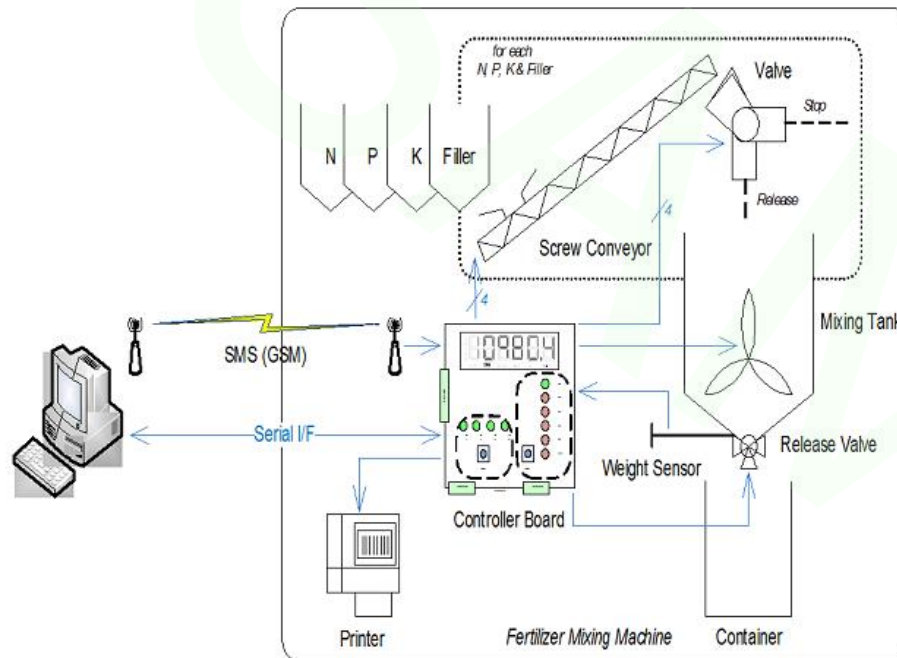
Government has set up smart farm flagship.

The concept of smart farm is to apply IT and electronics technology to the conventional agriculture sector in order to amplify the productivity and quality of agricultural products that will ultimately raise the quality of living of farmer in rural areas. Research and development on database of agricultural knowledge and the basic field-level sensors capable of reading PH, humidity and temperature have been developed.

Kitchen of the World, Global Niche, New Economy







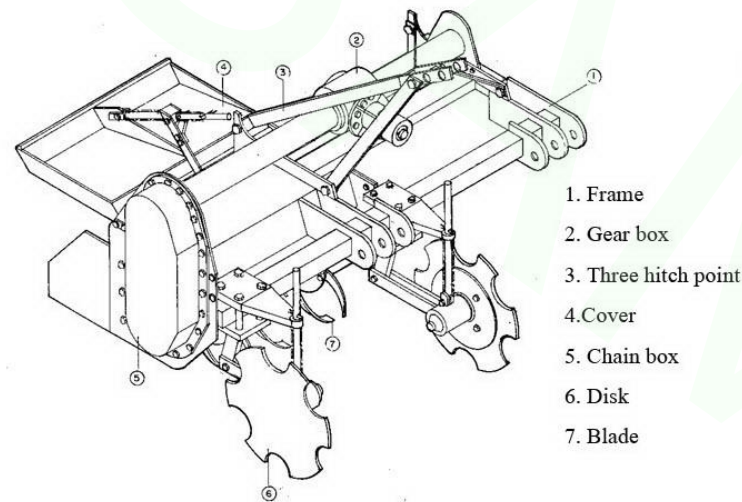
Government has launched the Village Mechanization Service Centers program which will help increase farmers' yields, become a catalyst for rural development and transform subsistence agriculture into a commercially viable activity.

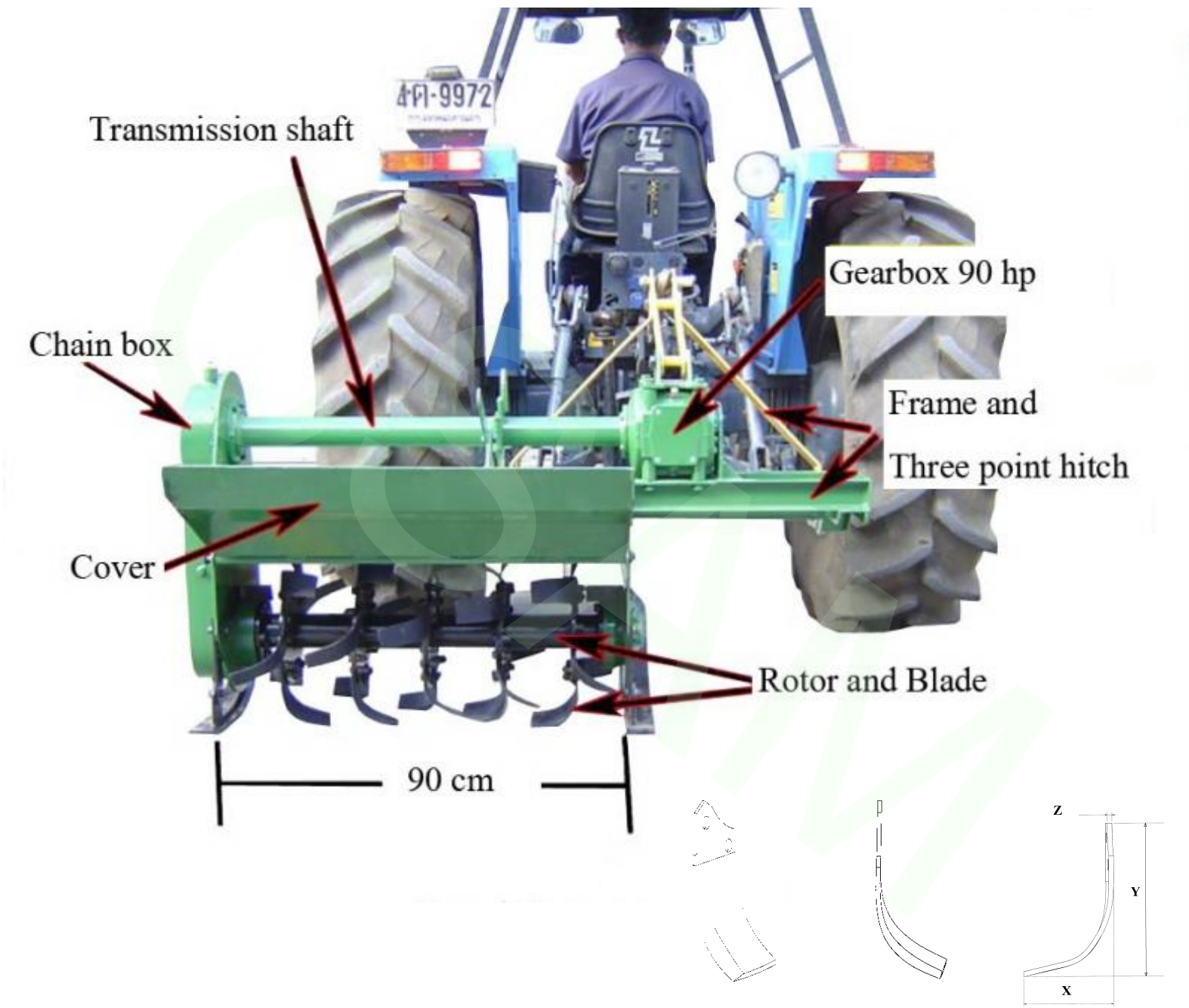
The aim is to set up about 886 district village mechanization service center and it is expected they will put more land into production; improve the quality and value of work; and provide agriculture-led industrialization and markets for rural economic growth. The center will provide a tractor hiring service, machine operations training, repair and maintenance.

SUSTAINABLE AGRICULTURAL TECHNOLOGY INNOVATIONS

Burning sugarcane leaves after harvesting is one of serious problem for sugarcane production in Thailand.

Therefore, the trash incorporator was developed for using with medium-sized tractors having power between 30-50 hp.









For 24hp tractor

จอบหมุนสับกลบใบอ้อยและกำจัดวัชพืช
สำหรับรถแทรกเตอร์ 24 แรงม้า

SIDE VIEW

FRONT VIEW

TOP VIEW

สถาบันวิจัยเกษตรวิศวกรรม	โครงการ : ออกแบบและพัฒนาเครื่องกลึงกับกลบใบอ้อย สำหรับรถแทรกเตอร์ขนาดกลาง	ผู้เขียน : อานนท์ สายคำฟู	หน่วย : ผลิตเครื่อง	ภาคเรียนที่ 1 : 20
	ชิ้นงาน : จอบหมุนสับกลบใบอ้อยและกำจัดวัชพืช สำหรับรถแทรกเตอร์ 24 แรงม้า	ผู้ออกแบบ : อุตสาหกรรมเกษตร	วันที่ : 12 ธันวาคม 55	หน้า : 1

จอบหมุนสับกลบใบอ้อยและกำจัดวัชพืช
สำหรับรถแทรกเตอร์ 24 แรงม้า

1	เพลาจอบหมุนใบอ้อย 4 จาน
2	ใบจอบหมุนแบบ L ผสม C จำนวน 24 ใบ
3	ชุดเกียร์วัด ขับกำลังจากเพลาอานวนยกกำลัง
4	ชุดข้อต่อพวงแรนเตอร์แบบพวง 3 จุด
5	ชุดเฟืองบังคับผ้าท้าย
6	ผ้าท้าย
7	ชุดเฟืองโซ่ มีอัตราทด 1.1 : 1
8	ผ้าครอบห้องโซ่
9	ชุดหัววงโซ่

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- “ Cassava is one of the important economic crop of Thailand
- “ The forth producer (1.2 M ha, 26.9 Billion Ton)
- “ The latest exporter (Export value > THB 29 billion)
- “ Utilized as raw material in various industrials
 - . Food
 - . feed mill
 - . other continuous industrials
 - . Energy purpose

Cassava production

“ Various machineries and implement were used

(for cassava production and post-harvest processing)

“ Not adequate mechanization

- . Available just for commonly use machineries
- . Harvesting and planting is still lag of machinery
 - “ Like other crops except rice production
 - “ Harvesting cost is the most highest contribution to total cost of production

Planting



Developing



commercial

Prototype by AERI, DOA

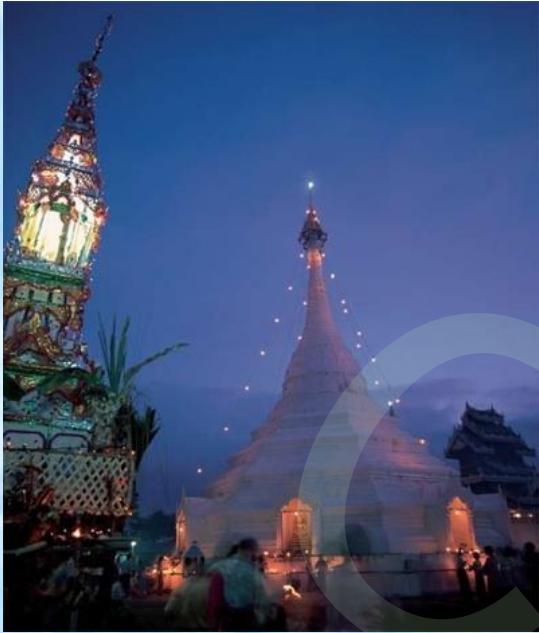




Cassava digger and catcher machine are under developed

“ To solve problem on hiring wage rate and labor shortage





Thankyou

