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Modern Agrotechnology and Subsidies in Malaysian Agriculture: Are We Using Them Wisely?

By **Wan Saiful Wan Jan**

Foreword by

Tun Abdullah Ahmad Badawi
Prime Minister of Malaysia (2003 2009)

IDEAS
Institute for Democracy and Economic Affairs

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TUN ABDULLAH AHMAD BADAWI

Agriculture is not only an important economic sector but also a necessity to our survival. There is now a global demand for food. The effect of climate change on food production and the escalation of food prices has become and international concern. The study by the Institute for Democracy and Economic Affairs (IDEAS) into ways of improving the livelihoods of Malaysian farmers through modern technology in agriculture is vital and laudable.

My vision for Malaysian agriculture is simple – it needs to be driven by technology to be highly efficient and productive. The right approach in agriculture development will bring benefits through ensuring enough supply of food for people. New sources of agro-based products of R&D and biotechnology, and high tech farming will increase food production and bring higher income for farmers.

I have always believed in the importance and potential of our country's agriculture. Thus, the ministry of agriculture's budget was doubled during my administration. I launched the National Biotechnology Policy, aimed to add value to the country's agriculture sector. I also made it a goal to encourage and to develop agro-based industry, especially the Small and Medium Enterprises (SMEs).

Our task is clear – to make agriculture exciting, modern and most importantly, profitable. The only way to raise the living standards of the rural poor, without increasing urban migration, is to develop agriculture and agro-based industry. I hope I have begun a new green revolution of sorts in Malaysia, and that we can now see agriculture's true contribution to our lives.

(TUN ABDULLAH HAJI AHMAD BADAWI)

1. Introduction

This report is the result of a study conducted by the Institute for Democracy and Economic Affairs (IDEAS). Our aim is to explore the issues faced by Malaysian farmers in relation to the use of modern agricultural technology. Our ultimate concern is to find ways by which the livelihoods (and productivity) of Malaysian farmers can be improved.

The study combined research, expert interviews and a focus group with farmers. The methodology employed in the study is robust, although the sample size for the fieldwork is relatively small due to resource limitations. Additionally, we faced the same challenge that many other researchers face – the dearth of publicly available data and statistics on the Malaysian economy.

We believe the findings are indicative of the general issues faced by farmers in Malaysia. Nevertheless, a larger scale study would improve the robustness of the results.

2. Malaysian agriculture – An overview

Agriculture is an important industry in Malaysia. It is a diversified industry, with crops ranging from commodities such as oil palm, rubber, cocoa and rice, to vegetables and fruit.

The industry is vital to the rural economy. Thirty seven per cent of Malaysians, mainly Malays or Bumiputras, live in rural areas and their main economic activity is smallholder farming. In the poorer northern parts of Malaysia, for example, a significant number of villagers are rice farmers; indeed, the state of Kedah is dubbed the "rice bowl of Malaysia."

Since people in rural areas are generally poorer,[1] the association between farming and rural life creates a somewhat negative image of agriculture: many people see farming, a vital economic activity in rural areas, as a job fit only for the poor. As a result, it is rare for members of the younger generation to aspire to be farmers.

As in other emerging economies, rapid industrialisation in Malaysia has resulted in agriculture's proportional contribution to GDP falling substantially, from approximately 46 per cent in 1957 to 21 per cent in 1980 and just 6.6 per cent in 2009.[2] Nevertheless, because of its importance to the rural economy and because of the high rates of poverty in rural areas, the growth of agriculture and agriculture-

1 According to 2007 official data from the Prime Minister Department's Economic Planning Unit, 7per cent of the rural population are in poverty (defined as having household income less than RM657 (USD193) per month).

2 Government of Malaysia "10th Malaysia Plan", page 77

related industries is vital in the effort to eradicate poverty in Malaysia.

2.1 Modern Agricultural Technologies in Malaysia

Agriculture is inherently unnatural: it involves planting seeds or grafting plants that have been selectively bred for specific characteristics deemed to be beneficial. In the absence of human intervention, such selectively bred crops would result in very low yields and would rarely survive in the wild.

Many new agricultural technologies have been developed over the past century. These range from techniques for modifying plants to methods of irrigation and tillage to harvesting, storage and transportation technologies.

Various technologies are available that allow more rapid development of new and better varieties of plants. These have been used to develop crops that are more resistant to pests (be they bacteria, viruses, fungi or insects), less susceptible to changes in weather, require less water or have better nutritional contents. Scientific innovation has also been used to alter the texture and taste of food items, such as the different varieties of durians that are available in the market nowadays.

Biotechnology has been widely used in Malaysia over the years to produce higher yielding cultivars, such as the MR119/220 rice seeds and the Dura and Pisifera (D x P) variety of oil palm. Generally, the use of biotechnology is seen by farmers as an important step to improve their productivity.

Chemicals are also widely used in Malaysian farms. Modern chemical herbicides are utilised to reduce competition from weeds, which otherwise would reduce yields by up to 90 per cent. Likewise, modern chemical insecticides, fungicides, rodenticides, and so on reduce losses due to infestations, which would otherwise often be devastating. Some vegetable farmers in places like Cameron Highlands also use integrated pest management techniques, which help improve productivity by combining chemical pesticides with other methods of pest management.

Mechanisation has greatly reduced the need for gruelling manual labour. Unlike their predecessors just a generation ago, farmers nowadays can use machines for activities such as ploughing and harvesting. Even compared with just a decade ago, rice farmers in rural villages are now far more likely to use tractors than buffaloes to plough their paddy fields.

By using these technologies, farmers are able to increase yields, reduce losses and reduce costs. Agrotechnologies free up resources – both financial and human – which can then be put to better use, resulting in greater wealth and more rapid economic development. Modern agrotechnology has brought

great benefits to Malaysian farmers and has helped many improve their livelihoods.

Unlike some other parts of the world where farmers have been put under pressure by consumer and environmental campaigners to avoid new technologies, Malaysian farmers are generally content to exploit technology to improve productivity. Indeed, according to Prasanna Srinivasan, "The increase in productivity [in Malaysia's agriculture] is directly attributable to the use of modern technologies, including fertilisers and pesticides."[1]

Nonetheless, smallholder farmers still lag behind big estates in terms of productivity, profitability and income.[2] This is not a new problem. More than twenty years ago Bruce Drury wrote "Malaysia now has a traditional agricultural sector of impoverished smallholders and renters and a modern sector of two-crop rice farms and large modern estates."[3]

It may be unrealistic to expect smallholder farmers to attain the same level of efficiency as large estates. Bigger plantations will typically benefit from economies of scale. To address this discrepancy, it may be desirable to allow smallholders to aggregate their holdings by removing restrictions on ownership of agricultural land.

It is also crucial that all farmers in Malaysia, regardless of the size of their holding, are able to utilise the most beneficial technologies. Unfortunately smallholders generally have less access to modern technologies than large estates. This contributes to inefficiencies, holds back improvements and perpetuates poverty among smallholders. Labour productivity in agriculture is only 60 per cent of that of the manufacturing sector.[4] The difference is significant and needs to be addressed.

2.2 Malaysian government and agrotechnology

Successive governments in Malaysia have committed themselves to agricultural modernisation. Among other things, this has entailed the creation of a Ministry of Agriculture and a Ministry of Plantation and Commodities (for bigger plantations). These two ministries have established various agencies, including the Malaysian Agriculture Research and Development Institute (MARDI), Malaysian Palm Oil Board (MPOB), and Malaysian Rubber Board (MRB).

Government agencies such as the Muda Agricultural Development Authority (MADA) and the Kemubu Agricultural Development Authority (KADA) have sought to improve irrigation and water management, in addition to providing other types of assistance. These agencies are charged with supporting farmers operating in certain geographical areas in Malaysia.

The Ninth Malaysia Plan (2006 – 2010) aimed to make agriculture the third engine of economic

1 Prasanna Srinivasan (2004) "Paraquat: a unique contributor to agriculture and sustainable development". page 30. http://paraquat.com/sites/default/files/Paraquat%20a%20unique%20contributor_0.pdf

2 Azmi Shahrin Bin Abdul Rahim, "A critical assessment the contribution of the agriculture sector in the growth of the Malaysian economy", accessed from http://economics.dstcentre.com/ on 8 August 2010

3 Bruce Drury (1988). "The Limits of Conservative Reform". ASEAN Economic Bulletin, 4(3), pp. 287-301.

4 Mohd. Azhari Ghazalli. n.d. Sustainable Development Agricultural Sector in Malaysia. [Online]. http://www2.water.gov.my/division/irrigation/paddy/technichal_paper/ SustainDevAgri.doc [Accessed 3 September 2009].

growth. In this Malaysia Plan, the government promises to invest significantly in the industry. A total of RM11.4 billion (approximately USD3.6 biilion) was allocated, an increase of 70 per cent compared to the previous Malaysia Plan. This is part of the government's strategy to eradicate poverty, which as explained previously is highest among rural villagers, many of whom are smallholder farmers.

The thrust of government investment is the "New Agriculture" programme that encourages high value added agricultural activities and large scale commercial farming. Under this programme the Malaysian Government has committed itself to making full use of modern agrotechnology to boost the sector's productivity. It promises to expand usage of modern agricultural techniques and technology in Malaysian farms, with the intention to make Malaysia a net exporter of food by 2010.

Despite some mentions of agriculture in the Tenth Malaysia Plan (2011 - 2015), it is still too early to judge Dato' Sri Najib Razak's commitment to agriculture as he only became prime minister in April 2009. But the government's determination to improve agriculture productivity was palpable during the prime ministership of Tun Abdullah Badawi between 2003 and 2009. The Malaysian Agro-Exposition Park Serdang (MAEPS) was set up under his leadership to support and promote Malaysian agricultural excellence through events and activities, including the biennial Malaysian Agricultural, Horticulture

> "...the only way to increase yields is via better use of modern technology.

and Agrotourism Show (MAHA). This is Malaysia's largest agriculture-related event, drawing 500,000 national and foreign visitors. The high-impact event is an opportunity for agro-entrepreneurs, buyers, investors and service providers to meet and showcase their products and services.

Tun Abdullah also avidly promoted the uptake of biotechnology by the industry. He made several calls to expand the pool of Malaysian biotechnology workers, scientists and researchers. Acknowledging that the shortage of qualified Malaysian biotechnologists could hamper his vision, he urged the private and public sectors to work together to train more graduates to be biotechnologists. Tun Abdullah went further by launching the first Malaysian National Biotechnology Policy in 2005, which includes in its nine aims transforming and enhancing the value creation of the agricultural industry.

The government under Tun Abdullah recognised that the only way to increase yields is via better use of modern technology.[1] As stated by Mohamed Ariff, "What is in Prime Minister Abdullah Badawi's vision for agriculture is not traditional agriculture but technology driven "value adding" to agricultural produces".[2] With such vision, it was only natural for Tun Abdullah to emphasise bringing modern technology into agriculture during his premiership.

3. Case Studies

This chapter presents two case studies based on fieldwork we conducted as part of this project. We visited a rice field in Kedah and an oil palm plantation in Sabah. The purpose of these case studies was to explore farmers' attitudes towards modern agrotechnology and to look at the topic from their perspective. Their insights are crucial to the analysis of this issue because it is farmers that will be most affected by policy changes.

Case Study 1: Rice Farmers in Alor Setar, Kedah

Background

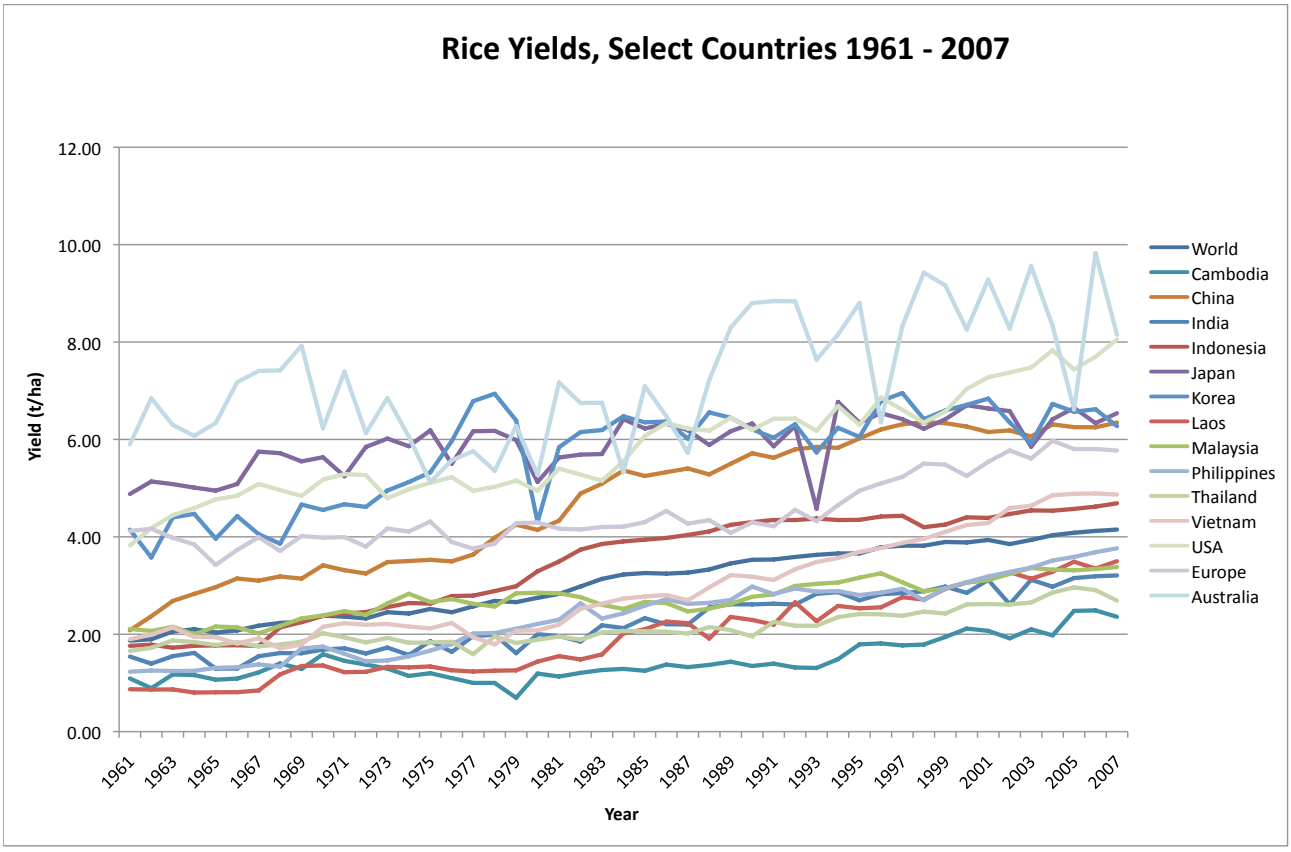
Average rice yields in Malaysia have improved slowly over the past fifty years. But yields in many other countries have increased more rapidly and since the 1980s our rate of yield increase has been below the world average – see Figure 1.

In large part this is a consequence of very low yielding smallholder plots – in spite of some improvements resulting from "group farming".

The Malaysian Agriculture Research and Development Institute (MARDI) has been tasked to introduce modern technologies to the industry. MARDI has helped smallholders access genetically-improved seeds, such as those for aerobic rice and hybrid rice, as well as chemicals to manage pests and diseases. Smallholders also receive government support for improving irrigation.

1 Interview with Nelleita Omar, Special Officer to former prime minister Tun Abdullah Badawi, 24 August 2009.

2 Mohamed Ariff (n.d) http://www.competitiveness.gov.jo/files/Drivers_Malaysia.pdf



(Source: International Rice Research Institute World Rice Statistics, July 2009)

The Malaysian government has stated that it wants the country to achieve 90 per cent self-sufficiency in rice production by 2010, an increase from 72 per cent in 2005. Regardless of whether self-sufficiency itself is desirable, it is certainly desirable to increase average yields, especially among smallholders.[1]

The rice fields we visited are in a small village at the outskirts of Alor Setar, Kedah. People in this village have been farming rice for many generations.

We spoke to six farmers - Haji Ismail, Pak Wahab, Pak Johari, Pak Puzi, Encik Kang and his nephew (full names are not disclosed here to protect their identities). These elderly gentlemen have been involved in rice farming since the 1980s. Their heavily tanned brawny bodies are evidence of the long hours they spend labouring in their rice fields under the hot sun almost every day.

Each farmer owns a relatively small strip of land, ranging from 0.25 to 4.5 hectares. The work they do

1 The achievement of self sufficiency in rice production might or might not be desirable depending upon the opportunity costs entailed. If the achievement of self-sufficiency can only occur at the expense of investments in other areas that would result in greater improvements in economic output, then it should be concluded that the goal is probably not desirable (equity considerations notwithstanding). The scale and scope of such opportunity costs cannot be known to any single individual since they are the result of millions of decisions by diverse economic agents. As such, it is generally better to leave such outcomes to the operation of the market, rather than attempting to plan centrally.

is usually just enough to make ends meet for their big families. Pak Wahab, for instance, has 6 children, 3 of them still in school.

Access to agrotechnology

The farmers have access to technologies supplied to them by the government through various subsidy programmes. They make full use of what they receive. But there is little to suggest that they would venture into technologies other than what was supplied or subsidised.

According to the farmers, every year, the Muda Agricultural Development Authority (MADA) carries out a survey to ascertain the amount of fertilisers and insecticides to be distributed. The amount of fertilisers and insecticides each farmer receives is determined by the size of their rice field. Usually they are supplied free by MADA but the farmers have to bear their own transportation costs.

Some of the farmers complain that the products they receive are not always what they actually need. There have been times when they needed herbicides but were instead given insecticides because that was the decision of the government agriculture officers. In other cases, the products they received were not very effective to address the problems they faced at that time. Unsatisfied with what he received, one of the farmers we interviewed decided to purchase his own herbicide from a local seller. But a quick glance at the rice fields reveals many brownish patches among the green rice stalks, most likely because other farmers simply rely on subsidised products from the government.

There have also been issues with the supply of subsidised fertilisers. At times the supply has been less than what the farmers needed, while at other times they received too much, which resulted in waste. The farmers we interviewed feel that there have been times when the fertilisers supplied by the government were insufficient to maximise their productivity. Some of them opted to buy additional foliar fertilisers, which works very well to improve yield. But this is not the case for everyone. Some say they would only use fertilisers supplied by the government, as this already enables them to earn just enough to support their families. For them this is acceptable.

As for rice seeds, the farmers usually use the MR 219 or MR 220 variety they receive from the local agriculture office. These seeds have been developed to produce crops that are more resistant to certain common diseases and have better yields. The farmers know these seed varieties will produce good yields but are uncertain about what other options are available because they mainly rely on the subsidised seeds from the government.

The conversations we had with the farmers indicated that they have tacit knowledge about what they

need to do to improve yields. They are certainly not averse to modern technology and are happy to make full use of chemical pesticides, fertilisers, and genetically improved seeds supplied to them.

Since the government agriculture officers do not provide free training every year, farmers learn from experience and exchange knowledge between themselves.

Many farmers seem to rely entirely on products supplied to them by the government. Those who make private purchases inform their decisions about brand choice by talking to colleagues and taking advice from vendors. The farmers we met generally feel indebted and grateful to the government for the support and subsidised products, which they believe have helped improve their livelihoods.

But this reliance on subsidised inputs and other forms of assistance has had some perverse consequences. One farmer pointed out that if he and other farmers were to insist on the products that they wanted, they might lose the subsidies, or at least receive no assistance to acquire the particular product that they want. He therefore prefers to receive what he himself deems less-than-optimum fertilisers given for free by the government rather than venture into other, possibly superior products. This "subsidy mentality", which inhibits experimentation and innovation, was obvious among the majority of the paddy farmers we spoke to.

However, not all the farmers are dependent on government support. Some are willing to spend their own money to purchase pesticides and fertilisers that they need or feel will work better. There are also times when they ignore the advice given to them by government agriculture officers because they feel they know enough to make up their own minds.

Case Study 2: Oil palm plantations in Lahad Datu, Sabah

Background

Malaysia is the second biggest palm oil producer in the world, contributing 41 per cent of global palm oil production and 47 per cent of the world's exports. Crude palm oil production increased from 10.8 million tonnes to 14.9 million tonnes over the period of the Eighth Malaysia Plan (2001 – 2005), while palm kernel oil production increased from 1.3 million tonnes to 1.8 million tonnes over the same period.[1]

Increased global demand for palm oil combined with tight global supply presents a substantial opportunity for Malaysian producers. However, the industry also faces increased production costs (due to high oil prices, among other factors). Meanwhile, yields have stagnated for two decades at four tonnes per hectare and the Malaysian Palm Oil Board has resorted to modern agrotechnology – starting with genome sequencing – in their quest to boost productivity.[2]

1 Government of Malaysia, Ninth Malaysia Plan, 2006, p. 91.

2 For example, see news report in The Star (16 November 2009) "Palm Oil Board achieves another first in oil palm genomes development". http://biz.thestar.com.my/news/story.asp?file=/2009/11/16/business/5108011&sec=business

We visited a small oil palm plantation in Lahad Datu, Sabah, run by Steven (full name withheld to protect his identity), who inherited the oil palm estates from his family. Steven explained how his family had run an electrical shop in Lahad Datu and used the profits as capital to start their oil palm venture.

Today, Steven owns about 700 acres (280 hectares) of land. This may sound quite large by the standard of Malaysian land ownership, but Steven considers himself a smallholder by the sector's standard. In part this is because his lands are split across different parts of Lahad Datu, varying from 30 to 300 acres per site.

On each acre, Steven is able to plant up to 55 trees, which produce approximately 0.6 tonnes of palm fruit. He estimates that this represents only around 60 per cent of the maximum yield and believes this is common among many small estates. But even with this less than ideal productivity, Steven says that just a 50-acre estate could reap about RM6000 (USD1600) net profit per month. This is a significant amount of money and Steven was proud to show us his huge bungalow and his three 4x4 trucks as evidence of his financial success.

Access to agrotechnology

As the owner of the plantation, Steven buys the products he wants his plantation workers to use. To help him make up his mind about which product to buy, he conducts his own research. As a result he is well versed about the latest seeds, fertilisers and pesticides available in the market.

The government has tasked the Malaysian Palm Oil Board (MPOB) with introducing new technologies to the sector. But Steven is not reliant on government subsidies or support. He has not received advice from any non-government organisations either. Instead he utilises the advice provided by the Malaysian Palm Oil Board as he sees fit and, as noted, Steven also conducts his own research. He uses the internet and he talks to other plantation owners to learn as much as he can. Once happy with the level of information he has, Steven purchases the seeds, fertilisers, and pesticides he considers most suitable for his needs.

Steven has progressively replaced old oil palm seeds with the Dura and Pisifera (D x P) varieties when replanting parts of his estates. D x P can be planted 28 feet apart compared to the conventional 30 feet apart of older seeds, which means he can plant more on his land. The variety also has shorter leaves, which makes harvesting easier.

Steven has tried several different types of herbicides, such as Paraquat, Glyphosate and Ken-Phosate. He has also used a combination of chemical and organic fertilisers. In choosing which pesticide and fertiliser

to use, the two biggest factors that influence his decision are the cost of the products and his own knowledge of how effective the products are.

Steven prefers to use imported chemical fertilisers. In his experience, imported fertilisers are more effective than locally produced ones. But he only buys imported fertilisers if they are not too expensive compared to local products. Steven recalls how fertiliser costs skyrocketed at one point because, he believes, the government imposed a higher import tax. This meant that he was not able to use any chemical fertilisers at all during that time, and the yield from his estate was badly affected.

Sometimes Steven uses the droppings of goats and cows as fertiliser because he also keeps a small herd in one of his smaller estates. He found that using the droppings as fertiliser is cheaper than building sewage tanks to dispose of the animal waste. Although using these organic fertilisers results in lower oil palm yield compared to using chemical fertilisers, Steven decided that, overall, this solution was still financially better than having to build sewage tanks for his animal farm.

Steven believes that using agrochemicals is a very effective way to protect his crops from weeds and other pests. He chooses the types of pesticides to use very carefully because some products work better than others. For example he told us that certain types of herbicides, such as Glyphosate, are ineffective during the rainy season as the rain washes away the chemical before it can take effect.

In theory, the abundance of low cost migrant workers in the sector provides Steven with an alternative means of removing weeds – he could employ them to manually weed his plantation. This could be cheaper in the short-term. But Steven prefers to use chemical herbicides as they are more cost effective, and, more importantly (to him), more humane.

> Around the world, modern agricultural technologies have helped lift hundreds of millions of people out of poverty and escape a life of hard manual labour. ”

4. Discussion

4.1 Modern agrotechnology is a vital tool to eradicate rural poverty

Around the world, modern agricultural technologies have helped lift hundreds of millions of people out of poverty and escape a life of hard manual labour. In Malaysia, new crop varieties, combined with chemical fertiliser and pesticides, in particular, have increased productivity and reduced waste. As a result, farms have become more profitable and the amount of time that farmers must spend tending their land has been reduced – liberating them to do other things.

Our oil palm case study shows how knowledge of the most appropriate technology combined with the will to use it — which in some cases may mean foregoing subsidised inputs — has benefited entrepreneurial farmers. Steven, the oil palm plantation owner we interviewed actively conducts his own research into which seeds and chemicals would bring him the most benefit. Similarly, the rice farmers we met also use modern technologies that they have access to, ranging from genetically modified seeds to herbicides, pesticides and fertilisers.

By increasing productivity, modern agricultural technology has become a vital contributor in improving farmers' livelihoods. Widely used, such technologies have the potential substantially to reduce rural poverty. Indeed, there is no substitute to such modern technologies in reducing agriculture-related rural poverty.

In the context of eradicating rural poverty, as well as in growing the agriculture sector as a whole, Tun Abdullah's commitment to increase the usage of biotechnology in Malaysia's agriculture industry should be applauded. It is to be hoped that the establishment of various agencies for biotechnological research and promotion will help to improve agriculture productivity and thereby reduce poverty.

4.2 Dangerous Opposition to Modern Agriculture

In spite of the evident benefits of modern agricultural technology, some non-governmental organisations (NGOs) still oppose such technologies. They call for dramatic reductions in the use of chemicals and a ban on genetically enhanced seeds.

NGOs do this in various ways. First, they promote scare stories about the nearly always hypothetical or anecdotal harm that might be done by such technologies. Often, the media picks up on these stories without questioning their validity or the motivation of those pushing these ideas. For the most part these stories pertain to the alleged health impacts of consuming products from crops farmed using certain pesticides. The objective of

such misinformation campaigns is to discourage consumers from buying these crops and farmers from using these chemicals.

Second, NGOs seek government restrictions on the use of certain technologies, citing either health or environmental impacts as justification. Again, they promote scare stories, sometimes based on no evidence, other times based on wild extrapolations of actual studies. Through these scare stories, they seek media attention, on the back of which they then call for bans and other regulatory intervention. Often, they also lobby government officials directly. Whether or not their actions keep Malaysian farmers and their families in poverty – and drive up the price of food – is not an issue for the activists.

A typical example of this NGO strategy is a story in the *New Straits Times* from May 2009 entitled "Paraquat poisoning: reaching out to get it banned".[1] Yet the reality is that hundreds of scientific studies have investigated the impact of Paraquat and found that, if used as advised, it is safe for users, does not leak into water supplies, and poses no risk to consumers. As a result, it has been deemed safe by various agencies including the US Environmental Protection Agency and the World Health Organisation. Moreover, such chemical pesticides dramatically improve farmers' productivity and livelihoods.[2] Both the rice farmers and the oil palm plantation owner that we met understand fully that the agrochemicals they use are not just safe but crucial to ensure they can raise enough money to support their families.

If politicians and regulators respond to these scare stories by restricting access to beneficial technologies, they will be denying poor farmers the right to safe modern farming practices, subsequently preventing them from improving their livelihoods. Not only is this morally wrong, it will also force farmers to use less effective methods, or, worse, to return to back-breaking manual labour.

Ultimately, policies and regulations that limit access to modern agricultural technologies will hurt poor farmers who are already struggling to cope with rising costs of living. They will be forced to remain in a life of poverty. It is therefore essential that the lobby of anti-technology campaigners is checked against science and reality.

4.3 The Adverse Effects of Agricultural Subsidies

As already noted, some farmers appear to be reliant on products supplied by government agencies at subsidised prices or for free. Some are so reliant on these government handouts that they do not buy additional inputs even when pests and diseases are damaging their crops. The reason they gave was simple yet telling: the government did not provide them with the right products to deal with the problems and they use only what is supplied or subsidised by the government.

1 See for example newspaper report in the New Straits Times (24 May 2009) "Paraquat Poisoning: reaching out to get it banned".

2 See among others Prasanna Srinivasan, op. cit.; as well as G. Chester and B.H. Woollen (1982) "Studies of the occupational exposure of Malaysian plantation workers to Paraquat". British Journal of Industrial Medicine. 39: 23-33.

Contrast this with the attitude shown by Steven, the oil palm plantation owner in our case study, who actively seeks out synthetic products to improve yield and to protect his crops. He conducts research and asks the advice of colleagues about which technologies are best. He does not wait for advice or support from government agencies. He is not dependent on government assistance, his plantation thrives and he has a much more comfortable lifestyle.

Agricultural subsidies are one of many types of government assistance intended to bring rural villagers out of poverty. While the original intention may have been virtuous, over time they have resulted in a "subsidy mentality" among some Malaysian farmers. After decades of receiving subsidised inputs, the rice farmers have become dependent on the government so much that some simply wait for whatever products the government throws at them. Unlike Steven who receives little or no state subsidy, the rice farmers have become reliant on government subsidies.

This "subsidy mentality" problem has been widely discussed by policy-makers,[1] with some suggesting that it is widespread among Malays and Bumiputras. Top-down delivery of subsidised products has failed to encourage farmers to take initiative on their own even when they know that the subsidised products they receive are not what they need.

Instead of empowering farmers, the subsidies have had the opposite effect.

Furthermore, as economist Azmi Shahrin Abdul Rahim notes:[2]

> "Paddy farming continues to face chronic inefficiencies arising from the Government's policy to continue guaranteed minimum price for paddy and structural defects. As a result of government intervention in price setting and distribution, structural defects have become institutionalized and resistant to change. It becomes even more difficult to effect a change now because subsidies to paddy farmers have become politicized as used as vote gathering tools."

There is also the issue of lack of transparency in government procurement of subsidised agricultural products.[3] It is not obvious that suppliers are chosen on the basis of who can provide the most effective products at the best value – for the taxpayer and for the economy.

If farmers were responsible for procuring their own inputs, not only would the "subsidy mentality" be eliminated but farming would become more efficient and cease to be a burden on the taxpayer. As Chris Edwards notes:[4]

> "Agriculture would thrive without subsidies. …. If farm subsidies were ended, and agriculture markets

1 See for example a Bernama news report http://web6.bernama.com/client/mecd/newsbm.php?id=246853

2 Azmi Shahrin Bin Abdul Rahim, "A critical assessment the contribution of the agriculture sector in the growth of the Malaysian economy", accessed from http://economics.dstcentre.com/ on 8 August 2010.

3 For example, see an article by Tunku Aziz, founder of Transparency International Malaysia "Procurement: a call for transparency" (The Malaysian Insider, 2 July 2009).

4 http://www.downsizinggovernment.org/agriculture/subsidies

deregulated and open to entrepreneurs, farming would change - different crops would be planted, land usage would change, and some farms would go bankrupt. But a stronger and more innovative industry would likely emerge having greater resilience to shocks and downturns."

The Malay proverb "sokong membawa rebah" (support that brings destruction) describes well the negative impact of agriculture subsidies on some of our farmers. If these subsidies were removed, agriculture would become a better engine of economic growth. Policymakers should carefully consider the negative impacts of agriculture subsidies. We should be bold enough to admit that our agriculture subsidies have produced negative unintended consequences and opt for their gradual abolition.

5. Conclusions and Recommendations

5.1 Agrotechnology is beneficial and should be embraced

From the foregoing discussion, it is clear that modern agricultural technologies are of great importance to farmers, who benefit from increased profitability and less drudgery and poverty. They are also important to consumers, who benefit from the increased availability and lower cost of food and textiles.

Unfortunately, these benefits are not always adequately recognised either by the public or by government officials. As a result, the anti-technology propaganda pushed by environmental NGOs has been allowed to influence consumer purchasing decisions and government regulatory decisions.

There is a clear need to improve public understanding of the role of modern agricultural technology. More research papers need to be produced to explain the benefits of modern technology and to educate the public about their safety. Journalists should also investigate further whenever they receive a press release about the allegedly negative impacts of modern agricultural technologies.

Of course we are not Panglossian: we recognise that all technologies can have negative effects. But factual distortion is simply wrong and will not help make our agriculture industry more productive. Therefore

policy makers, journalists and news editors to look beyond press statements and challenge the allegations contained in activist group's press release.

More importantly, it is essential that regulatory approval for agricultural technology be based on clear, science-based principles, and not subject to arbitrary decisions motivated by the campaigns and hypothetical concerns of anti-technology NGOs.

5.2 Agriculture subsidies have created unintended consequences and should be reformed, if not removed

We urge policymakers to think creatively about ways to reduce and ultimately eliminate agricultural subsidies, which at present are contributing to a harmful "subsidy mentality."

One possible approach would involve switching from direct subsidies to agriculture vouchers that could be exchanged for agricultural inputs, thereby leaving it up to farmers to decide which seed, fertiliser, pesticide and other technologies to purchase. Such a policy reform would obviously need to be fleshed out in more detail, but it would in principle have considerable advantages over the current system.

IDEAS
Institute for Democracy and Economic Affairs

The Institute for Democracy and Economic Affairs (IDEAS) is inspired by the vision of Tunku Abdul Rahman Putra al-Haj, the first Prime Minister of Malaysia. We share his vision as stated in the 1957 Proclamation of Independence that this nation should:

> **"be for ever a sovereign democratic and independent State founded upon the principles of liberty and justice and ever seeking the welfare and happiness of its people and the maintenance of a just peace among all nations"**

IDEAS is Malaysia's first think-tank dedicated to promoting market-based solutions to public policy challenges. We were officially launched on 8 February 2010, in conjunction with Almarhum Tunku Abdul Rahman's 107th birthday, by YBM Tengku Razaleigh Hamzah at Memorial Tunku Abdul Rahman Putra, Kuala Lumpur, in an event graced by three generations of Almarhum Tunku's family members.

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