

# The Role of Agribusiness in Thai Agriculture: Toward a Policy Analysis

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Thai agriculture has been at a crossroads for about a decade. It cannot rely on the two primary factors that supported its growth in the past—surplus land and stable markets abroad. These factor and market constraints have led policy makers to advocate a larger role for agribusiness in agricultural development. A perception has emerged that Thailand is losing its comparative advantage in staple food crops and that future success in agriculture will depend on the ability of private firms to create more value added and innovate technologies.

This article explores the policy implications of promotional incentives for agribusiness. It advances two sets of arguments. First, a promotional policy must recognize differences in biogenetic and technological traits between commodities. These traits thereby prescribe "appropriate" roles for agribusiness and government, which will differ from one commodity to the next.

Second, preoccupation with agribusiness as a "panacea" for agricultural problems may distract from glaring deficiencies in the public sector's own performance in agriculture. At issue is not the comparative advantage of Thai agriculture, but rather the *comparative advantage of the government* to intervene effectively in agriculture. *While the government cannot plan agriculture, it cannot turn over all development functions to private firms.* The promotion of agribusiness alone will not correct policies and bureaucratic weaknesses which presently harness the innovation of incentives and the achievement of needed institutional changes in the agricultural sector.

## OVERVIEW OF AGRICULTURAL POLICY

### Two Waves of Agricultural Diversification

During the 1950s, 60s, and 70s, surplus land and demand for food exports encouraged Thailand's "first wave" of diversification out of rice and rubber. Farmers expanded production of upland field crops, mostly cassava, kenaf, maize, and sugar, and also mung beans and sorghum. Expansion was achieved through extensification, though large public investments in roads and primary irrigation supported steady growth in output. Modest improvements in yields were added to many of these crops, including rice, but yields declined measurably in cassava, sugarcane, and mung beans.<sup>1</sup>

A second wave of diversification began in the late 1970s. This wave has been marked by a shift into fruits, vegetables, oilseeds, tree crops, beef, poultry, swine, dairy cattle, and prawns. Many of these commodities require advanced processing technologies and thus yield higher value added at the processing stage. Some are import-competing commodities, and some become inputs for export-oriented manufactures. To support this shift, the Board of Investment (BOI) revised its Investment Promotion Acts in 1972 and 1977 to promote capital-intensive processing on a broad scale. One consequence of these privileges has been rapid growth in food industries, which now constitute nearly one-third of total value added in manufacturing.

### Commercialization Strategy

It is widely regarded among policy makers that Thailand must succeed at completing the second wave of diversification if the country is to maintain its comparative advantage in agriculture, diversify farm incomes,

and boost living standards among the rural poor. Policy makers concede that existing policies and practices may be inadequate to the tasks implied by the second wave.<sup>2</sup> But there is debate over the specific means for achieving these tasks.

National planners and officials at the Agriculture Ministry perceive the challenge as rooted in a *shortage of commercialization* in the countryside. Central to some official opinions is the idea that large agribusiness firms can act as a cardinal tool for speeding commercialization and tackling the second wave. Agribusiness, rather than government or small agriculturalists, is the innovator, the lead entrepreneur. At least three related arguments have been cited in support of promotion for agribusiness. First, large firms are better equipped to mobilize long-term capital than are farmers, middlemen, or small processors. Long-term risk capital is required for commercial expansion in ventures such as tree crops, livestock, aquaculture, and fruit or vegetable plantations. Second, many of the second-wave commodities are more research-intensive than those of the first wave. Again in theory, large private firms can absorb research costs and assist in dissemination. And third, it is said that much modern technology and other inputs elude small-scale farmers and might even exceed their acumen and skill. Contract farming between firms and farmers will channel inputs and credit to the farmer, disseminate new technologies, and make the farmer more productive.

## TOWARD A FRAMEWORK FOR POLICY ANALYSIS

### The Burden of Proof

A policy that favors a greater role for agribusiness should first make a sound case in support of such an initiative. A common argument is that the model devised in poultry, which involves contract farming between firms and small producers, is a good thing because it has enhanced productivity in a new commodity, introduced new technologies, and garnered export earnings. But the real burden of proof for proponents of agribusiness promotion is to show that this would create *positive externalities*, which are the benefits of one individual's actions that spill over to others and accrue to the economy at large. Externalities create a dilemma because they involve "market failure," meaning they are difficult to price and private entrepreneurs cannot capture the gains from the benefits they yield. It becomes the job of far-sighted entrepreneurs and strategic policies to correct market failure and induce innovations which would yield net societal benefits.

The burden of proof for proponents of the privatization policy is to show that positive externalities can be created better by firms than by government, by the incremental innovations of independent farmers, or by market forces generally. Proof of positive externalities involves the identification of relevant market failures which neither farmers nor the state will have incentives to correct, but which would be cured by the resources and innovations of large firms. Promotional incentives, as one form of compensation, would help subsidize the creation of positive externalities.

### Public-Private Roles: Agreement and Disagreement

The first step toward an analysis of appropriate public-private roles in the creation of net social benefits is to review what we know about the comparative advantage of private firms and government in the area of agricultural development. A most important theme in development literature is that government has a very critical role to play in agriculture. The idea that more space is needed for private firms should not, therefore, gloss over the fact that there are many policy issues in which government has a comparative advantage.

There is widespread *agreement* that the most important areas in which government must have effective policies are physical and social infrastructure (roads, irrigation, human resources), biotechnology research, extension, the enforcement of grades and standards in traded commodities, and the provision of law and order to secure contracts and property rights.<sup>3</sup> It is regarded that the Thai state has performed measurably well (until recently) in the provision of rural infrastructure, namely large-scale irrigation, roads, and primary education. It has performed less well in research and development (R&D) and the provision of property rights.

There is widespread *disagreement* over whether government should intervene in other areas, including the marketing and exporting of commodities through government marketing boards; price subsidies; direct controls over the allocation of credit and foreign exchange; border taxation; and the direct production and processing of commodities. The Thai state has intervened variously in all these areas of disagreement. Its interventions often have been subject to widespread scrutiny, and sometimes they have involved high-level corruption. Examples include rice export taxes; Commerce Ministry intervention in rice procurement and exporting; the transport of select crops by the Express Transit Organization; and pork slaughtering. Agriculture officials have also proposed to create a National Agricultural Council, or NAC. The NAC would oversee the actual *planning* of agricultural production. Such planning has not worked in other contexts, as the experiences of former Communist countries have made abundantly clear, and it is one area that attracts widespread condemnation among development theorists.

The debate over the comparative advantage of the state versus that of private firms centers precisely on the nature of the benefits generated by public and private innovations. On the one hand, some benefits are *diffuse*, meaning they create external economies or externalities. The benefits usually cannot be captured by the agent who invests in creating them. An example is the successful invention of a new technology by one farmer which may convey valuable information to her neighbors, thus giving the neighbors a positive externality or net gain. Such gains are often referred to as non-excludable. Some types of diffuse externalities can be made excludable by third-party intervention, as when the state patents the discovery of the innovative farmer and thus requires her neighbors to pay for the benefits yielded by its application. Research and extension in open-pollinated seeds like rice are not likely to attract the interest of private firms, and here the state must act.

On the other hand there are those benefits that are *internalized*. These benefits are excludable, meaning that the agents who create them can exclude them from others and even sell them as a priced and tradeable commodity. An example in agriculture is hybrid seeds. Because farmers cannot keep their own hybrid seeds for use in the next planting season, owing to genetic deficiencies of hybrid offspring, they must return each season to the producer to obtain new seed. Firms that invest in hybrid research therefore have a natural lever of market control over their product. But because of research cost variance from one commodity to another, not all commodities attract hybrid research by private firms.

Though externalities are commodity-specific, the delineation of public and private roles is often open to delicate trial and error. Third-party enforcement opens a range of possibilities for the role of the state versus private firms. But clearly some types of enforcement are "inappropriate." An example is when the state enforces excludability for private innovations which have very diffuse externalities, for example open-pollinated crops. In these instances projects are often doomed to fail. Some private firms, for instance, have attempted to create contract farming in rice, an open-pollinated seed. Contract farmers were obligated not to disseminate company seeds, fertilizers, and pesticides and to sell their harvest only to the firm. These arrangements are more suitable in crops like hybrid maize, where the farmer must return to the company each planting season for seed and inputs. Rather than "forcing contracts," a more appropriate role for the state in rice lay in subsidizing the acquisition and dissemination of exotic rice strains by private firms, for example Basmati and Jasmine rice. Unfortunately, the Ministry of Agriculture has been slow to act on these opportunities, but it has, nevertheless, permitted large firms to attempt contract farming in rice.

### **The Policy Agenda: Technological and Institutional Innovation**

What are the issues which call for an analysis of externalities and appropriate public-private roles? The first wave was made possible by the land surplus and investments in irrigation and roads. But public and private actors now have to address a different set of issues. Some commodities require a different organizational framework and even more centralized, hands-on management. Thailand's typical arms-length agricultural markets may be less adequate to the task of promoting new products on both the supply and the demand sides. In poultry, for instance, contracts between firms and farmers have proven productive and efficient. In light of this example, vertically-integrated firms figure prominently in the minds of officials as a panacea to speeding commercialization.

One danger with a policy that relies on agribusiness, however, is that it invites the public sector to fall back

on practices it used during the first wave while turning second wave responsibilities over to private firms. That approach is inappropriate for facing up to the challenges that now confront Thai agriculture. Development theory identifies technological and institutional innovations as the keys to sustaining comparative advantage.<sup>4</sup> Institutional innovations involve both economic and political institutions. Economic institutions refer to the rules of an economy which organize product inputs, product exchange, and product upgrading. They include property rights, product distribution networks, the mode of technological innovation (such as public research and patenting), the modern firm, credit institutions, and capital markets. Political institutions include the legal system, the bureaucracy, and the system of law enforcement. Agricultural development is a process whereby institutions undergo substantial innovation and change.

The agenda for the second wave thus involves organizational and legal reforms in the institutional framework which governs Thai agriculture. It also involves the participation of both private firms *and the government* in technological research and dissemination. The primary concern over the next decade is the restructuring of incentives within which innovation and productivity would occur. Institutional reforms are critical to sustaining productivity. *The promotion of agribusiness alone will not achieve the tasks at hand.* Considerable reforms are long overdue in public irrigation, commodity pricing programs, and rural property rights. There is little in the promotion of agribusiness that would encourage reform in these areas. The delivery of investment privileges to private tree farms in the absence of rural property rights reform, for example, has done nothing to improve the management of rural land and forest resources.

### **POLICY TASKS FOR THE 1990s**

At least three different kinds of policy tasks will confront policy makers, firms, and farmers over the coming decade. One involves the delineation of "appropriate" public and private roles. The second is the critical need for reform in the public sector's agricultural policy machinery. And the third concerns distribution and equity issues, particularly where small-scale farmers and staple crops are concerned.

### **Commodity Specific Public-Private Roles**

Development "functions" of the state and firms are commodity specific. Firms will be most anxious to invest in areas where they can capture the gains yielded from investments in new technologies. Where technological factors make the gains diffuse, the state must evaluate carefully the viability of subsidies and third-party enforcement.

Herein lies a policy dilemma. Advocates for agribusiness promotion must show that promotion would create positive externalities. But it is precisely in commodities where the gains are diffuse, or external, that firms will not have an incentive to innovate, and some types of promotion in these areas, as in the case of rice contract farming, can be inappropriate. Policy incentives must be designed in a way as to guard against inappropriate roles and negative outcomes. It may indeed be appropriate for the state to subsidize a firm's acquisition of new seed strains, provided criteria are built into these subsidies to ensure the benefits spill over to the farmer at large. In commodities where the gains are internalized, promotions can still be appropriate. Outcomes will depend on how promotions are designed. Again, the challenge for policy makers is to ensure that firms do not capture all returns and that there is a net social gain. The state has a critical role to play here and it must rethink its own policies and performance.

The Ministry of Agriculture should take a serious look at the technology of poultry and hybrid maize and based on that evaluation assess the viability of the contract-farming model in other commodities. Furthermore, recent evidence has shown that even in the area of hybrids, firms may wait for the public sector to invest first. In maize, for example, private seed companies spend most of their resources on non-pollinated maize, and many firms are waiting for government research to yield new hybrid technologies which they would then purchase and produce.<sup>5</sup> In dairy farming, too, *in vitro* embryo production offers a promising means to boost dairy yields. Private firms have expressed interest, but they also say that this area is not commercially viable. They prefer that the public research program invest in the R&D, or that the environment for public-private collaboration be improved.<sup>6</sup>

Subsidies are one means to encourage R&D, but ideally they would be followed by disciplinary measures on the part of government to enforce stated policy objectives. The Thai state has always been weak in this regard, however, partly because policy objectives are usually vague, and partly because the state has little capacity or will to enforce measures on private firms. Protection for intellectual property would be another means, and maybe a more effective first step as it would not involve expenditure of resources through promotional privileges. A third and perhaps more promising avenue would be the creation of public-private research institutions in biotechnology. In the area of mechanical innovations, the private sector does quite well on its own.<sup>7</sup> The government's role here would lie again in intellectual property protection. Patents are questionable because they have a 15-year protection period and may inhibit widespread experimentation, especially in the early and intermediate stages of innovation which Thailand now occupies.

### The Need for Reform in the Public Sector

These issues should not be approached in terms of an alleged "declining" comparative advantage in staple crops. The staple crops, many of the open-pollinated seeds, require more careful and effective government management, notably in the area of research and extension. A more useful lens is to evaluate the challenges of the current decade in terms of *the comparative advantage of the government, notably the state research, extension, policy enforcement, and law enforcement apparatuses*. Public sector institutions, rather than the agricultural sector per se, should be the object of reform. Concern should focus on existing laws, policies, biases, institutional capacities, and civil service practices that inhibit the restructuring of incentives in agriculture. At least three weaknesses require attention.

*Research, information-management, and inter-departmental coordination capacities:* There are over 45,000 officials in the Ministry of Agriculture and Cooperatives with an annual budget that well exceeds 20 billion baht. R&D, however, occupies a lowly status on the list of Ministry priorities. The budget of the Department of Agriculture, the primary research unit, ranks fifth among all departments in the ministry and constitutes, on average, some 6 percent of total ministry spending. There also exist problems in coordinating biotechnology research among government agencies and public universities in a number of fields. In some cases, private firms have been discouraged from seeking collaboration with the public sector in R&D because of these communication and coordination problems.<sup>8</sup>

Promotional standards in the civil service also inhibit reform and innovation. The Civil Service Commission emphasizes the *quantity* of research projects rather than the quality of research as a criterion for civil service promotions.<sup>9</sup> A recent study of the Department of Agriculture found that the number of small, short-term projects has been boosted over the past two decades in order to ensure that Department researchers are provided satisfying promotions. But most biotechnology research is long-term and must be rolled over several years, and hence these projects are not encouraged by civil service promotion standards.

The Ministry of Agriculture and Cooperatives also suffers from fractious competition among its departments. Both the Department of Agriculture Extension and the Office of Agricultural Economics collect data on crop yields, production costs, and output. These agencies often compete with one another for the status of having the "correct" figures each crop season, figures which by nature are hard to derive because of variance in growing conditions from one village to the next. Mitigating this problem would involve first, doing away with the myth that costs and yields can be calculated and their estimates used to somehow "manage" agriculture, and second, reforming the information-gathering and coordination capacities of this ministry.

*Procurement, Pricing, and Delivery Systems:* These areas involve policies and programs engaged in the procurement, import, export, transport, or subsidization of farm commodities. Like other industrializing countries, Thailand has been moving gradually toward supporting its farmers through price subsidies. The Ministries of Agriculture and Commerce have been most active in rice and also in subsidizing fertilizers. In these areas there is great need to create more efficiency, transparency, and accountability.

To date, most producer support programs in rice—which usually involve a complex array of forward purchases by the Commerce Ministry and subsidies to boost farmgate prices—have failed to achieve the stated objective of raising producer incomes. The biggest challenge for the government is to design a price

subsidy program which can prevent the benefits from being captured by the most influential traders, politicians, and bureaucrats who implement the programs. Researchers have found, for instance, that fertilizer allocations by the Marketing Organization for Farmers (MOF) over a four-year period generated in a net transfer of income from farmers to the agency amounting to 132 million baht.<sup>10</sup>

The expansion of the role of the Bank for Agriculture and Agricultural Cooperatives in subsidizing producers may constitute one step toward reform of these programs, so long as bureaucratic capacities are developed at the local level to ensure that funds are delivered to the target beneficiaries, namely small-scale farmers. Another substantive step toward bureaucratic reform would involve the disclosure of all off-budget accounts of the ministries, departments, and other agencies involved with price support and procurement programs. Such a measure would precede the creation of more accountability and effectiveness in these programs.

*Institutional Arrangements Governing Factor Inputs:* Natural resource constraints make more effective management of land and water inputs a most critical aspect in policy reform. Simply building more dams and promoting private firms to plant trees will not address these challenges in a constructive, much less equitable, manner. In water, the Irrigation Department needs to work at projects that will promote more effective water management at the farm level. The swift development of tertiary canal systems is an overdue task. Reform in rural property rights laws is also needed. Small-holders in forest reserves are virtually banned from obtaining formal credit because they lack title deeds. Community forest institutions lack effective enforcement capacities because the state does not recognize these institutions as legitimate juristic entities. Reforms in both water management and land tenure may even require, or need to be a part of, an overall decentralization of the central government administration.

### **Distribution, Equity, and Risk-Sharing**

If policy reforms in agriculture are meant to raise farmer incomes as well as to sustain Thailand's comparative advantage in agriculture, then distribution and equity issues must inform the debate. In commodities where firms are likely to have a strong role, measures must be enacted to ensure that benefits are guaranteed for the farmer. Thus far, a number of contract-farming projects in livestock have converted landless farmers into credit-worthy livestock breeders, a fact which is worthy of applause. If this model is proven to be feasible in other commodities, an appropriate role for the government is to ensure that technologies and higher incomes do indeed accrue to the farmer. But the public sector has not developed any independent criteria for evaluating the distributional and equity implications of contract-farming.

In commodities where the state finds it appropriate to subsidize innovation or enforce excludability, owing to diffuse externalities, a legal framework must be designed that would guard against farmers having to bear excessive risk. Often in contract farming, firms bear no risk in the event of a natural disaster. One alternative would be the development of a comprehensive crop insurance program, which could shoulder risk for the farmer. Firms might even be asked to manage the delivery of insurance, just as they manage commercial credit, or even subsidize it for the farmer.

Perhaps the finest example of how *not* to spread risk and remove uncertainty, from the farmers' point of view, is to institute the proposed National Agricultural Council (NAC). It is not feasible, if based only on the experiences of other developing countries, to plan the agricultural sector. The NAC threatens to enforce contract-farming obligations very harshly, despite the fact that independent criteria for judging the worthiness of these contracts eludes the regulatory framework. Farmers would bear excessive risk and their choices would be severely limited. There has been scarce consideration of the plausible disastrous impact such planning and coercion would have on agricultural productivity should farmer choice be strangled. Individual farmer choice has been a pillar of Thailand's success in agriculture thus far, and there is no justifiable reason why it should be done away with now. It is also problematic to attempt the actual planning of agriculture when the basic information-gathering and policy enforcement apparatus is not up to the task. Given the fallibilities involved with calculating cost, yield, and production data at the national level, it is not at all difficult to imagine the many troubles a national planning council would confront in attempting to manage overall production.

## CONCLUSIONS

Agribusiness is not a panacea for innovation, it is a partner in what should be a transparent, public-private alliance which should include independent farmers as well. In second wave commodities, officials need to scrutinize which commodities will afford an "appropriate" role for agribusiness, based on the externalities thus generated and on the economic and political costs of third-party enforcement. While in very simple terms there can be a line drawn between open-pollinated and hybrid crops, that line is becoming increasingly fuzzy. It is likely that research programs will involve extensive cooperation among firms, public agencies, and other research institutions, including universities. The fragmentation of the public research apparatus, however, has thus far worked to discourage public-private collaboration.

In the face of factor and market constraints, institutional innovations in areas such as property rights, credit, price supports, risk-bearing (insurance), and the overall regulatory framework would provide incentives for firms *and independent farmers* to cope. But the public sector must get its own house in order to face these tasks. The promotion of agribusiness alone will not do the job. Institutional reform in the public sector should top the list of priorities for overall promotion of institutional change in agriculture over the coming decade. For agribusiness to become a functional partner for both farmers and the state, it must have an effective, coherent, and competent state with which it can coordinate its contribution to agricultural development. Otherwise promotion of agribusiness could lead to inappropriate roles and negative outcomes for both the government and private firms.

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