

# Power and influence in the development of Thailand's bioeconomy

A critical stakeholder analysis



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## SEI discussion brief

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## Introduction

A bioeconomy relying on technical innovation to maximize efficiency and derive high value from biobased resources is gaining traction around the world to achieve sustainable growth (Gawel et al. 2019). In Thailand, the bioeconomy is defined as “the production and conversion of renewable resources into alternative products such as food or energy sources” (Thailand Board of Investment 2019, p.5). This is also known as the industrial bioeconomy. Within the past five years, the industrial bioeconomy in Thailand has become a flagship development under Thailand’s 20-year National Strategic Plan (2017-2036) which states that the bioeconomy will lead to “quality of life enhancement, social fairness improvement, environmental risks reduction, and environmental scarcity [reduction]” (National Strategy Secretariat Office 2018, p.51).

To promote the development of industrial bioeconomy, Thailand invests in research and development of biotechnology for energy, agriculture, chemical and pharmaceutical industries. It also offers a wide range of tax and non-tax incentives, particularly to cassava and sugar-cane sectors for producing value added products such as biofuels, bioplastics, and bio-additives (Thailand Ministry of Industry 2018; Waramit 2012). In parallel, Thailand is also exploring an alternative artisanal model of bioeconomy that promotes business development based on biodiversity conservation and local knowledge. However the development of the industrial bioeconomy has taken precedence and artisanal bioeconomy has been largely overlooked (Mortensen 2019). In addition, despite stated efforts to promote inclusive and green growth, the Thai bioeconomy has rendered many socio-environmental challenges because it is premised on the established institutional structures where the power concentrates in a few economic and political actors (Chiengkul 2019).

In this brief, we use a stakeholder analysis to unpack the institutional setups and power dynamics among stakeholders involved in the Thai bioeconomy in order to illustrate the closed nature of decision-making and concentration of power that explains the domination of industrial bioeconomy. Specifically, we examine the roles and influence of different stakeholder groups i.e. government, private sector, civil society and smallholder farmers and where they assert their power and influence to shape the Thai bioeconomy. Our analysis of stakeholders, ranking and assessment of their roles, power and influence is interpreted through a review of available literature in Thai and English, on recent developments in Thailand’s bioeconomy, supplemented by 14 key informant interviews with stakeholders involved in research, policy decisions, and coordination of the bioeconomy conducted in July 2019.

IMAGE (ABOVE): A woman carrying sugarcane © SEI ASIA

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## 1. Key Stakeholders in the Thai bioeconomy

The main stakeholders may be classified into four groups: government, private sector, civil society and farmers. While there are other stakeholders within the development of the bioeconomy, we characterize these key stakeholders, in their roles as agenda setters, coordinators, knowledge producers or farmer groups (Figure1).

**Agenda setters:** The Thai bioeconomy is aligned to corporate interests. Two major industry actors – PTT Global Chemical, a state-owned energy enterprise that processes and distributes fossil fuels, and the privately-owned Mitr Phol Group, Thailand's largest sugar producer – are the most influential entities in the bioeconomy. Holding strategic leading roles within bioeconomy-related policy working groups, they set the agenda for the development of the industrial bioeconomy. These selected businesses related to the bioeconomy are included in policy decisions through working groups as part of a Public-Private Partnership scheme to develop the bioeconomy.

Government agencies responsible for oversight of the bioeconomy include the Office of Industrial Economics (OIE 2019) and the Office of Cane and Sugar Board (OCSB 2019), both under the Ministry of Industry (MOI). The Office of Industrial Economics acts as a policy-setting entity and convenes stakeholders for the bioeconomy. Ministers are members of the Prime Minister's Cabinet and are also part of the parliament. Ministers represent their ministries, working alongside businesses within working groups under the Public-Private Partnership scheme.

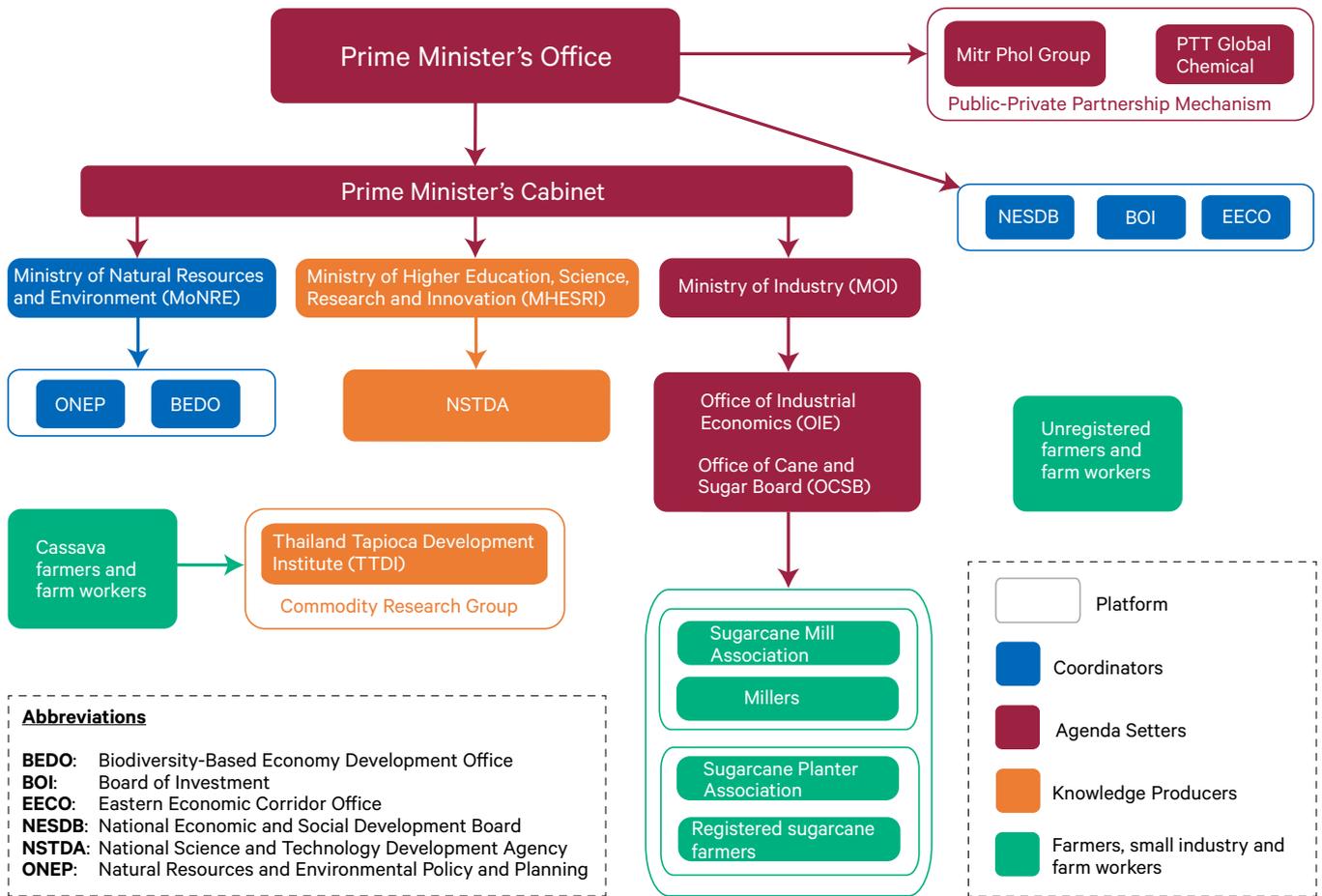
**Coordinators:** The Board of Investment, under the Prime Minister's Office, plays a coordinating role among investors, Thailand's private sector, and the government (BOI 2019). It also provides incentives such as tax breaks for investment in the bioeconomy. The Eastern Economic Corridor Office, also under the Prime Minister's Office, coordinates among key public and private actors for the development of the Eastern Economic Corridor special economic zone, which extends over three eastern provinces of Chachoengsao, Chonburi and Rayong (EECO 2019). The investments will focus on investment in bioindustries, which include biofuels and biochemicals, biotechnologies in agriculture and in food processing, pharmaceuticals and health care (EECO 2018a).

The National Economic and Social Development Board (NESDB), operating under the Prime Minister's Office, is formally responsible for social and environmental aspects of the bioeconomy and plays a coordinating role among all government agencies. While the NESDB is responsible for formulating development strategies at national and subnational levels, its primary duties do not focus specifically on the bioeconomy. Rather, they are broadly focused on coordinating with concerned agencies and state enterprises regarding planning and implementation of various development programmes and on acting as an advisory entity to the Prime Minister and Cabinet (NESDC 2019).

Departments under the Ministry of Natural Resources and Environment, including the Biodiversity-Based Economy Development Office (BEDO) and the Natural Resources and Environmental Policy and Planning (ONEP), are also involved in the bioeconomy. BEDO is the main coordinating entity for developing the community-based bioeconomy focused on involving communities, small-medium enterprises and natural resource management agencies (BEDO 2019), while ONEP is responsible for reviewing environmental impact assessments of bioeconomy-related projects (ONEP 2019).

**Knowledge producers:** Within knowledge-producing and agenda-setting roles, the Ministry of Science, Technology and Higher Education is responsible for setting the research agenda and allocating research funding. Its National Science and Technology Development Agency (NSTDA) provides financing for research and development and produces technical research on the bioeconomy (NSTDA 2019).

Figure 1. Stakeholder analysis of the Thai bioeconomy



Source: authors' characterisation

Other knowledge producers include non-government actors such as members of academia who receive grants from the government to conduct research on the bioeconomy. Commodity-specific research groups also exist, such as the Thailand Tapioca Development Institute.

**Farmer, small industry, workers and their groups:** Last are sugarcane and cassava farmers, millers, and their organizations, such as the Sugarcane Planter Association and the Sugarcane Mill Association that represent their members for the Office of Cane and Sugar Board (Manivong and Bourgeois 2017). Farmer groups may also be involved in environmental impact assessment stakeholder consultation processes, if bioeconomy-project proponents choose to do so, but their involvement is not mandated.

## 2. Interconnected roles and power within government

Within government, departments and agencies reflecting industrial sectors have the greatest involvement in agenda setting and decision-making. Based on interviews and primary research, these stakeholders work predominantly under the the Prime Minister's Office and the MOI. Table 1 shows the key government stakeholders and their levels of power and influence within the bioeconomy. The colour shades represent the level of power and influence of an agency or office in shaping public policy on bioeconomy, with dark orange representing more power and lighter shades representing less power. For example, those in dark orange are influential stakeholders with the authority to set strategies and regulations and to influence agenda and investment priorities; the bright

yellow indicates those with coordinating and convening power but without a significant role in decision-making; the lightest shade of yellow marks knowledge-producer and environmental-safeguard groups that are seldom a part of decision-making processes.

Indeed, the key government actors within the bioeconomy are united under their shared vision of promoting industrial development. The MOI is the primary agency tasked by the Office of the Prime Minister with executing the vision of bioeconomy with the Office of Industrial Economics taking the lead in promoting the development of the bioeconomy (Aung and Denduang 2019; Nguyen 2019; OIE 2019). Similarly, both the EECO and the Board of Investment under the Prime Minister's Office work to promote industry interests by "removing investment hurdles and fostering supporting mechanism to attract investments" (Thai Ministry of Industry 2018, p.6).

Table 1. Main government stakeholders' roles and levels of power in the bioeconomy. The colour shades represent the level of power and influence of an agency or office in shaping public policy on bioeconomy, with dark orange representing more power and lighter shades representing less power.

Ministry	Department	Primary role in bioeconomy
Office of Prime Minister	Board of Investment (BOI)	Promoting foreign investment and issuing policy incentives e.g. tax break
	National Economic and Social Development Board (NESDB)	developing national economic and social development strategies; monitoring achievement of the national targets
	Eastern Economic Corridor Office (EECO)	drafting bioeconomy master plan and strategies to promote biohub and biocomplex; advising Prime Minister on regulatory interventions to accommodate business development of bioindustries particularly biofuel in EEC
Ministry of Industry	Office of Industrial Economics (OIE)	drafting the 10-year industrial bioeconomy strategy and ensuring its alignment with national development strategy
	Office of Cane and Sugar Board (OCSB)	overseeing the sugarcane industry for domestic production (food & fuel) and international export; regulating benefit sharing between major producers and smallholders' farmers;
	Thai Industrial Standards	setting standards and creating demand for bioplastics
	Department of Industrial Works	issuing licences for bioderived products
Ministry of Natural Resources and Environment	Natural Resources and Environmental Policy and Planning (ONEP)	approving environmental impact assessments (EIAs)
	Biodiversity-Based Economy Development Office (BEDO)	developing artisanal and community-based bioeconomy
Ministry of Higher Education, Science, Research and Innovation	National Science Technology Development Agency (NSTDA):	connecting research from NSTDA to Extension Department for tech transfer to farmers
	Institute for Agriculture Technology and Information Management	writing white papers for key decision makers
	Science and Technology Institute (STI)	
	Biotech/Genetic Engineering	conducting research

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Government actors outside the industrial sector lie at the periphery of decisions related to the industrial bioeconomy and are represented in lighter orange in Table 1. Not all departments under the Office of the Prime Minister and MOI are influential in shaping the bioeconomy. For instance, entities that focus on environmental and social aspects of the bioeconomy, such as BEDO, embrace the environmental sustainability aspect of the bioeconomy, yet engage mainly with communities rather than industrial actors (Mortensen 2019). ONEP has also been overruled by decisions related to the bioeconomy: In 2017, the Prime Minister's Office expedited the time frame for processing environmental impact assessments for biotechnology projects in the EEC, overriding ONEP's mandate with the argument that biotechnology projects are "clean" and therefore less likely to have substantial environmental impacts (Chiengkul 2019).

Knowledge-producing actors, such as NSTDA and its subordinate agencies receive government funding to research bioeconomy-related science and technology. To date, Thai government funding, however, has focused on biotechnology research and development rather than on possible environmental and social costs and benefits, such as green growth and equitable distribution of wealth (Ministry of Science and Technology 2012; Aung and Nguyen 2019).

### **3. Public-Private Partnerships and selective distribution of power**

In Thailand, the bioeconomy has been promoted by the government as an area of development that distinguishes itself from industrial sectors because it could improve social conditions and green growth. Yet, the current pathway of the bioeconomy, though cross-sectoral, differs little from past models, demonstrated by de-prioritization of social inclusivity and sustainable principles in favour of economic profits.

The Thai government established a national version of Public-Private Partnerships – also known in Thai as *Pracharath*, originating from *pracha-* or the people and *-rath* or the state (Yoon 2015) – to foster collaborative partnerships among government, business groups, academics and research institutions to promote various development projects (PTT Global Chemical 2017). The Public-Private Partnerships model demonstrates the involvement of corporations that have strong ties to the current Prime Minister. For instance, the owner of Mitr Phol is the chair of the private-sector committee of the multi-sector Public-Private Partnerships and is deputy chair of its executive committee (Kongkirati and Kanchoocharat 2018). The thematic working groups in Public-Private Partnerships are also co-led by representatives of other large corporations from banks and other businesses (Vongkusolkrit 2016).

Within the bioeconomy, the Public-Private Partnership has placed corporate representatives of the biofuel sector as agenda setters who have made biofuel crops, such as cassava and sugar cane, central to the development of the bioeconomy. Cassava and sugar cane are among the major crops promoted for biofuel feedstock (Vongkusolkrit 2016). PTT Global Chemical co-leads the committee for developing high-technology sectors called the New S Curve<sup>1</sup> with the MOI (PTT Global Chemical 2017; Kongkirati and Kanchoocharat 2018). Further, PTT Global Chemical and Mitr Phol were also part of a multi-stakeholder working group that MOI convened as part of the Bioeconomy Working Group to conceptualize the bioeconomy of Thailand (Nguyen 2019).

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<sup>1</sup> The New S Curve is a Thai government strategy approved by the Cabinet in 2014, of promoting economic growth by targeting the development of five industrial sectors- robotics, aviation and logistics, biofuels and biochemicals, digital, and medical hubs (Narumon 2017)

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The Public-Private Partnerships scheme has also made the private sector indispensable in national development. For instance, Public-Private Partnerships will drive investments in transport infrastructure such as airports, high-speed railways and highways connecting economic hubs (Oxford Business Group 2018). The overall Public-Private Partnerships scheme is not only a key driver in the development of the bioeconomy, but it also makes decisions and investments on technological and transport infrastructure for the bioeconomy (Thai Community Development Department 2018).

#### **4. The marginalized and under-represented stakeholder groups in Thailand's bioeconomy**

As discussed earlier, the least powerful government actors in the development of the bioeconomy are government ministries concerned with social and environmental issues. These are BEDO, ONEP and the NESDB, and their relative lack of power demonstrates the strong orientation towards industrial and economic growth.

Yet, in addition to the exclusion of non-industry-oriented government actors are exclusions of the non-governmental organizations (NGOs), community groups, and small businesses in bioeconomy decision-making. Civil society representatives, NGOs and farmers are not considered part of the Public-Private Partnerships, as defined in official documents of *Pracharat* and EEC (Vongkusolkrit 2016; EECO 2018b).

Most smaller actors such as farmers and farm workers do not have any platforms to voice or negotiate their concerns about the industrial bioeconomy. This is the case with cassava farmers who lack formal organization (Aung 2019). With sugarcane, however, registered farmers have some ability to negotiate concerns through a representative body, the Sugarcane Planters Association (Thailand Office of the Council of State 1984; Manivong and Bourgois 2017). However, it is unclear how effectively it represents those concerns or the interests of unregistered farmers who are not formally represented or considered in the OCSB's system. The Association is certainly a mechanism to ensure domestic supply of sugar for the biofuel industry (Fielding and Aung 2018).

Indeed, the least influential stakeholder group in the current bioeconomy model are farmers and workers. These groups are at the bottom of the scale in power and influence and lack the resources and authority to have a say in bioeconomic development. It is important, however, to emphasize the broad diversity of farmers and workers whose stakes in the bioeconomy vary, specifically in the production of fuel crops, and are characterized by their marginalized social and economic status in terms of land-ownership, legal status, nationality and gender. For instance, smallholder farmers may have concerns about contractual arrangements and cost-benefit sharing within the private sector; non-energy crop growers or local communities might have concerns about water pollution caused by excessive use of chemicals (Saengpassa 2018); non-Thai migrants and women farmers and workers may have concern about lack of access to social services and unequal pay (Papong et al. 2017; Silalertruksa and Gheewala 2018).

#### **Conclusion**

Institutional arrangements within the Thai bioeconomy are characterized by a concentration of power and extensive collaboration in the highest offices of government to promote industrial growth. Within government, the Eastern Economic Corridor Office, under the Prime Minister's Office, and the Office of Industrial Economics, under the MOI, have the greatest power and influence to set the agenda and to convene selected stakeholders in the bioeconomy. Other government stakeholders – in research, health, or environmental and social protections – play minor roles in the bioeconomy.

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Large corporations, particularly PTT Global Chemical and Mitr Phol, have power and influence to shape the bioeconomy's agenda through the official Public-Private Partnership scheme. They have used their position to steer the bioeconomy towards cassava and sugarcane commodities. Their power has been solidified through this bioeconomy Public-Private Partnership, and they now aim to win contracts for high-value infrastructure projects in national development.

Stakeholders with the least influence and decision-making authority in the bioeconomy are civil society, farmers and workers. Their organizations are not represented in this Public-Private Partnership scheme and they also lack platforms to represent their interests.

One of the declared primary goals of the bioeconomy is to promote inclusive and green growth. However, its current reliance on existing power dynamics and established relationships – with stakeholders from industry and business shaping the agenda as researchers and farmers are deliberately excluded – casts doubt on its ability to achieve this goal.

There still is potential for the Thai bioeconomy to reorient its trajectory to one that can achieve its social and environmental goals, as well as economic ones. Fostering collaborations among the key policy-makers, the small-scale business interests of farmers and workers, and the knowledge producers should include academics and research institutes, NGOs and other civil society actors. Inclusive evidence-based decision-making - for meaningful inclusion of farmers and farm workers could be a key area of future research for directing Thailand's bioeconomy towards a more sustainable and equitable track.

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