April 2022

POLICYMAKER SURVEY: CLIMATE CHANGE IMPACT ON ASEAN AGRICULTURE

WHITE PAPER

TABLE OF CONTENTS

Foreword

By Dr. Paul Teng, Managing Director, National Institute of Education International (NIEI) and Senior Fellow/Advisor in Food Security, S. Rajaratnam School of International Studies (RSIS)

In hindsight, the survey of ASEAN policymakers conducted in late 2021/early 2022 was highly prescient and its findings have been affirmed through the dire warnings in the latest Intergovernmental Panel on Climate Change (IPCC) Report of 2022. Climate change has impacted agricultural production and on the livelihoods of smallholder farmers in the region in recent times and will continue to do so. So, it is not surprising that the survey interviews with key policy makers in the region have shown a high level of awareness and concern about this existential challenge.

The ASEAN region is also known to have one of the highest frequencies of unexpected severe weather events, which have destroyed human lives, property and crops. Typhoons, flooding, drought, unseasonal rainfall have become common symptoms experienced almost every year by at least one of the ten ASEAN member states (AMS). Unusually high and low temperatures have also been experienced, impacting both terrestrial and aquatic ecosystems. It is encouraging that all these have become part of the consciousness of policy makers and as this report shows, has cascaded down towards recognising that remedial action must be taken.

At the centre of concern is agricultural production and consequently food security. But because most food in SE Asia is produced by smallholder farmers, it is appropriate that they be given emphasis in programmes aimed at education and climate adaptation. There is a need to translate concerns into distinct policies on climate smart farming, and that these policies be backed by action such as increased funding for R&D, farmer education and extension programmes to promote adoption of climate smart technologies (e.g., submergence tolerant crop varieties) and techniques (e.g., new crop rotations).

It is also encouraging that ASEAN policymakers see climate change as exacerbating the many recurring constraints already faced by smallholder farmers, such as soil degradation and pest and disease outbreaks. However, recent world events such as the Ukraine crisis, disrupted food supply chains leading to shortages in importing countries and price hikes, all add to the effects that climate change is already having on food systems. The encouraging thought, however, is that by recognising there is a problem, an important first step has been taken towards finding resolution.

Many AMSs participated in the deliberations of the 2021 COP26 Climate Summit, which recommended many actions for adaptation but no general agreement on priorities. What the present report shows is that there is an opportunity for concerned policymakers to take an ASEAN-wide approach to climate change. This may involve multi-sectoral consultations utilising the various mechanisms managed through the ASEAN Secretariat – and to engage the private sector in this, especially the many agriculture-related enterprises.

Climate change is here to stay. CropLife Asia should be commended for reaching out to this important group of stakeholders. With high level policy support, it is more likely that the region can work together to find common solutions.

Background and methodology

CropLife Asia has worked with PSB Insights, a leading global market research firm, to undertake a research programme among policymakers in the ASEAN region. The research is designed to better understand the impact of climate change on agriculture, food production, and smallholder farmers in the ASEAN region, and how these key challenges can be addressed.

PSB Insights interviewed 35 ASEAN policymakers in a quantitative online survey, with interviews taking place between October 6th and October 20th, 2021, and introductions made by the ASEAN Secretariat. Alongside this, between October 2021 and January 2022, PSB conducted four qualitative interviews with key policymakers across the region with interviews lasting approximately 45 minutes and covering similar topics. No incentives or honorariums were given to any respondent for their participation.

Key findings

- Climate change is seen as the biggest obstacle faced by food systems in ASEAN by a majority of policymakers.
- Stakeholders see a wide range of environmental issues that smallholder farmers face, including soil quality, pest infestations, and crop yields. ASEAN policymakers are near unanimous in saying these challenges for farmers will be made worse by climate change.
- While there is agreement that all parts of society will be negatively impacted by climate change, policymakers feel that farmers will face the biggest negative impact.
- Providing better education regarding agricultural technology and innovation to the sector are seen as key to mitigating the impacts of climate change on farmers in the region. Policymakers are clear that these are more important than regulatory changes or financial solutions such as improving access to credit.
- There is an expectation for the private and public sectors to work together to mitigate the impacts of climate change and protect food systems in the region. Policymakers are eager to see corporations and governments working together to improve education and increase innovation in agricultural technology and science.

Climate change is the core issue for ASEAN food systems

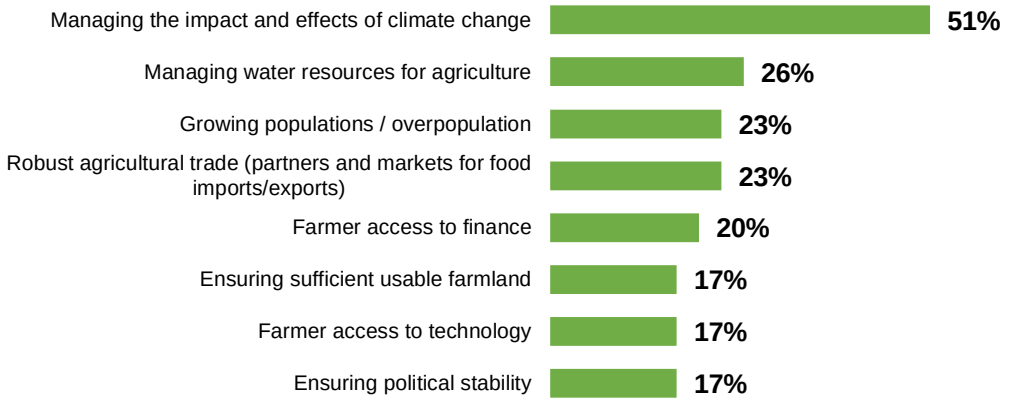
Policymakers across the ASEAN region resoundingly believe that the impacts of climate change are a significant obstacle that the region will have to reckon with over the coming years. When asked to think about the biggest food systems obstacles that their country will face over the next five years, half of policymakers (51%) said that managing the impact and effects of climate change is the most pressing challenge for their country, significantly higher than all other challenges.

> *"All agroecological systems are affected by climate change in terms of rising temperatures, irregular rainfall, droughts, and so on… Climate change impacts all of us in the short, medium, and long-term. That's why we have to take actions and strategies to cope with climate change."*

> *"What will (our national) agriculture experience be with the projected changes of temperature and rainfall in 2050, compared to the baseline level? In 2050, they say that food production will decline—our corn, rice, and meat. The biggest reductions will be in our corn production and there will be increases in consumer prices."*

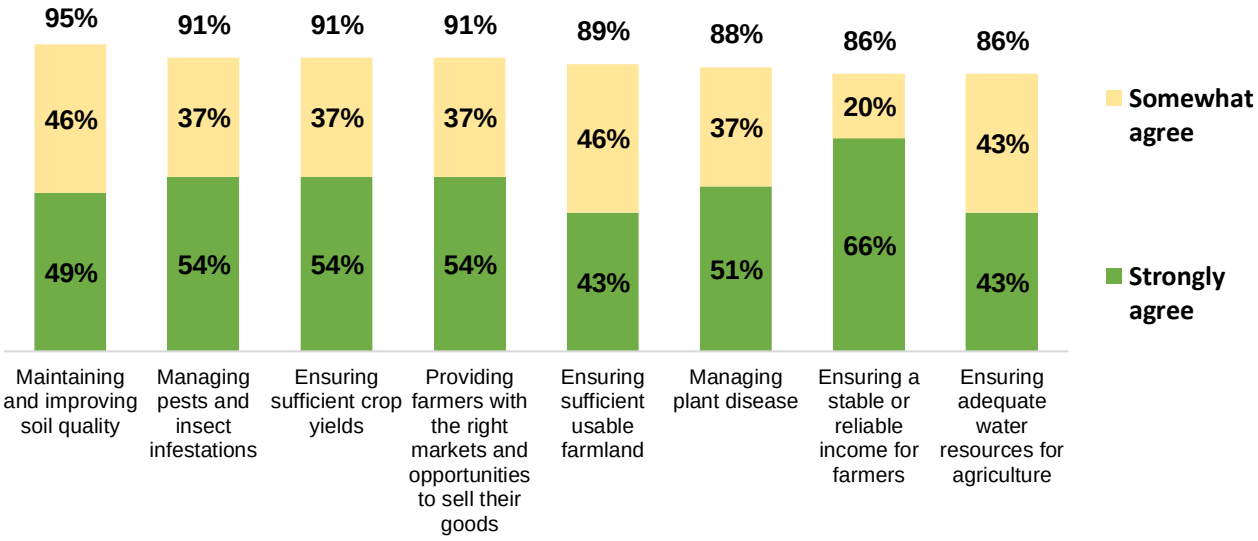
After managing the impacts of climate change, managing water resources for agriculture (26%) is seen to be the second biggest obstacle for food systems in ASEAN countries, followed closely by overpopulation (23%) and a robust agricultural trade environment (23%). Access to finance (20%) and technology for farmers (17%), as well as sufficient usable farmland (17%) and ensuring political stability (17%) are seen as less significant obstacles for food systems by ASEAN policymakers.

Biggest food systems obstacles faced by ASEAN countries



The challenges faced by ASEAN countries are widespread, and the biggest challenges are around soil quality, pest management, crop yield, and selling opportunities. Nearly all (95%) of ASEAN policymakers agree that maintaining and improving soil quality is a challenge faced by their country today, while nine-in-ten (91%) believe that managing pest infestations, ensuring sufficient crop yields, and providing farmers with the right markets and opportunities to sell their goods are also key issues. Ensuring usable farmland (89%), managing plant disease (88%), adequate water resources (86%) and reliable income (86%) are also seen as important challenges for the region.

The biggest concerns for ASEAN countries in the next 10 years



There is a strong feeling among policymakers that climate change is already having negative impacts, which are only going to be made worse over time. There is near unanimous concern among ASEAN policymakers that climate change is exacerbating many of the agricultural challenges faced by their countries today. The impact of climate change is perceived to be most detrimental for maintaining and improving soil quality (92% agree it has been made worse by climate change), managing plant disease (88%), and ensuring sufficient crop yields (88%). As a result, all ASEAN policymakers express concern regarding the ability of their country to ensure sufficient crop yields in the coming ten years, of which more than two-thirds (69%) say they are ‘very concerned’.

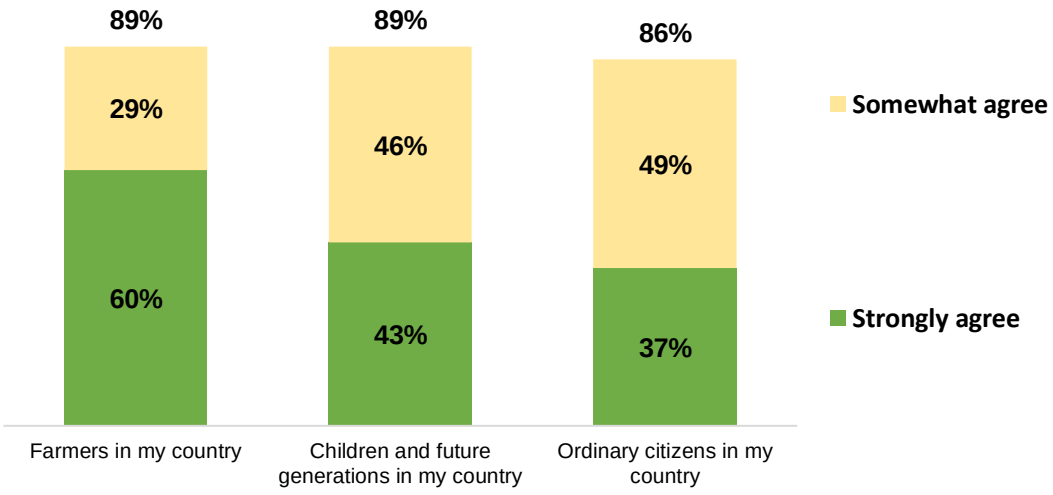
"We have seen extreme weather events such as droughts and flooding that have already impacted food production in the region. There is a correlation between the extreme weather events caused by climate change and the damage inflicted to crops that then produces lower yields for farmers."

"Because of climate change, we experience longer periods of draught. So, these are really stresses to agriculture, to our farming sector—farming and fishing sector."

ASEAN farmers are at the front line of experiencing the consequences from climate change

Policymakers anticipate that people across the region will be negatively impacted by climate change. Nearly nine-in-ten agree that farmers, children and future generations, and ordinary citizens in their country will be harmed or negatively impacted. However, policymakers believe that farmers will be impacted the most by environmental issues, with 60% saying they 'strongly agree' that farmers will be negatively affected by climate change. Farmers are understood to be on the front line of the impacts of climate change, with policymakers acutely aware of the devastating impact of adverse weather events and other climate change impacts on smallholders.

Who will be negatively impacted by the effects of climate change on food production/security?



There are a wide range of barriers to progress for smallholder farmers according to ASEAN policymakers. There is near unanimous agreement (95%) among policymakers that the slow adoption of agricultural technology and sciences by farmers is a key barrier. The barriers for which there is next strongest agreement are climate change impacts and extreme or adverse weather (94%), the need to focus on immediate returns rather than long-term benefits (92%), and the slow adoption of sustainable production practices (89%). At the other end of the scale, a lack of clarity with agricultural regulatory standards (86% agree, 17% strongly agree) and lack of regulatory frameworks (71% agree, 14% strongly agree) are where there is least strongly held agreement amongst policymakers that they stand as a barrier to progress for smallholder farmers.

"*It is about the farmers. Farmers are always faced with weather events and issues. They are the ones we are trying to influence and change behaviour to adapt to new practices and systems. At the end of the day, it will affect their livelihood. Long dry spells and drought cause farmland to dry up and the yields of farmers will decrease."*

"We have set up different initiatives to support farmers for rehabilitation after floods, drought, disease, and other impacts of climate change."

Education on agricultural technology and increased innovation are key to mitigating impacts of climate change

ASEAN policymakers envision a central role for plant science and agricultural technology in tackling the impacts of climate change. Over four-in-five (86%) policymakers said that providing better education about the use of agricultural tech and sciences, and innovation in the areas of agricultural tech and science would be 'very important' in mitigating the impact of climate change on farmers in the region. Issues around regulatory frameworks and improving farmer access to credit are less likely to be seen as 'very important' at 71% and 60% respectively.

The varied importance of these climate change mitigation efforts is mirrored in policymakers' expectations, and what they want to see from governments in the region. ASEAN policymakers say that the most helpful things governments can do to support the agricultural sector in mitigating climate change impacts are improving access to agricultural technologies and sciences, and providing widespread education for farmers on crop management and development.

> *"If we do not build up our resilience by carrying out adaptation and mitigation activities to counter the impact of climate change, there will be long-term issues."*
>
> *"There is a place for agricultural technologies in mitigating and adapting to climate change, but the question is how do we make it more sustainable and more environmentally-friendly while also balancing the different climate circumstances of each country and tailoring the technology to each situation."*
>
> *"We need to innovate to develop new technologies… to promote climate change adaptations and mitigation mechanisms and create better agroecological systems and infrastructures."*

ASEAN policymakers are eager to see a high degree of cooperation between public and private sectors in helping farmers mitigate the impacts of climate change. The private sector is recognised for bringing technology and capital investment that will benefit smallholder farmers in the region. Innovation and education are areas where there is a role for academics, the private sector, and governments to work together.

> *"We need science and academics, but we also need money from the private and public sectors. It is important to understand what the communities need, particularly the smallholder farmer. Policymakers, public and private sectors, climate-friendly agribusiness all need to work together. Private investment often owns the resources and can support research and development"*
>
> *"We need private and public partnerships for research and development to bring research, development and delivery of services to the user, farmer, small holder, women, youth; Partnerships for investment to build resilient infrastructure and agriculture against climate risks are important"*
>
> *"If we want to answer the challenges in climate change—there are investments that only the government can commit to, but we would need also the participation of the private sector. We need to partner and tap the resources of the private sector. They can come in as investors for technologies that we should be developing."*