Strategies for supporting inclusive innovation: insights from South-East Asia

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Foreword

Innovation is not neutral: it has both a rate and, crucially, a direction. The style of innovation frequently touted as the answer is often not inclusive at all – it can exacerbate social and economic inequality and have unintended environmental consequences.

As current events across the globe are demonstrating, the "move fast and break things" mantra so dear to techno-utopians is producing many detrimental effects, eroding trust and locking us up into obsolete logic of development.

We believe that there is a major opportunity for policy makers in the Asia Pacific region to play an active role in creating the conditions for a different type of innovation: one that is not focused on single point solutions but more coherent to the nature of the complex challenges faced by the region. A type of innovation that fosters inclusion and reinforces the SDGs, rather than exacerbating inequality.

So, this report is driven by one fundamental question: are we seeing models of inclusive innovation emerging in the Asia Pacific region and, if so, are they pointing to concrete alternatives to the dominating innovation narrative (driven by Silicon Valley)?

To answer this question, we partnered with Nesta, building on their comprehensive framework of inclusive innovation, to produce case studies from across ASEAN countries, particularly Myanmar, the Philippines, Indonesia and Viet Nam. The research team conducted dozens of interviews with key stakeholders from grassroots to government to seek patterns and outliers. In Viet Nam, UNDP is currently hosting a series of conversations with different stakeholders on the practical implications of adopting an inclusive innovation framework.

This report draws on the insights from these case studies, to present concrete recommendations for policymakers in Asia and the Pacific who are interested in developing a more coherent approach to innovation as a means of addressing societal challenges and fostering more inclusive ecosystems. We hope that many will take up the challenge. We firmly believe that those governments who shape the innovation narrative around inclusion will reap major benefits and induce new dynamics that will help achieve the SDGs.

Please take a look and let us know your thoughts, considerations, and if you note gaps. More importantly, do get in touch if you want to further pursue this research agenda and if you want to work on concrete initiatives that can demonstrate the value of an inclusivity in innovation policies and projects.

The strategies set forth are not a final statement – they are a starting point for a collective inquiry.

Join us on Twitter **@ricap_undp** and join the **#inclusiveinnovation** **#NextGenUNDP** conversation.

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Contents

Introduction

A mostly vacant office block in Yangon might not be the first place you would picture if asked where innovation is happening in South-East Asia. But the Tamwe Plaza is more than meets the eye.

Its sixth floor is home to 360ed – an education startup that uses cutting edge technologies and ideas to address challenges in the education system in Myanmar. In a series of soundproofed rooms and art studios, designers, developers, and technology students are creating a range of virtual reality (VR) and augmented reality (AR) tools and products to be used by teachers and students across the country. Work is also being done to pilot new teacher training models and provide access to educational technologies in remote or conflict-affected areas.

The organisation's founder started her career as an elementary school teacher in Myanmar, following in the footsteps of her mother and grandmother. She came up with the idea for 360ed while going through an incubator programme in Silicon Valley, after studying for a postgraduate degree in education at a university in the United States. Sharing her motivation for launching the initiative, Hla Hla Win told us that "the teacher training model in Myanmar is 100 years old. We don't want to replace the teachers with technology, but instead to use technology to upgrade their abilities to create a culture of self-learning and confidence."[1]

At the time of publication, Nesta has gathered stories and insights from entrepreneurs like Hla Hla, as well as from practitioners, experts and policymakers across a range of ASEAN countries.[2] Working with the UNDP, we have been researching the ways in which different innovation models are being applied in this region to address key development and sustainability challenges.[3] Interest in developing more inclusive forms of innovation is growing in many parts of the world. Various theories and frameworks have been developed to conceptualise what this might look like, including by Nesta.[4]

However, policymakers remain in need of inspiration and examples of what this looks like in practice, as well as support in selecting and applying the approaches that will be most relevant for their own context.

This report aims to make a contribution to that agenda. **Section 1** shares the findings of a rapid literature review of the ways in which inclusive innovation is understood in the ASEAN region, while **Section 2** starts to build a typology of some of the 'strategies' that we observed different actors using to bring these ideas to life. It includes case studies illustrating different approaches from the four ASEAN countries in which we conducted field research: Indonesia, Myanmar, the Philippines, and Viet Nam (see Appendix for a note on methodology and a full list of interviewees). A concluding **Section 3** offers some ideas for governments and other actors in the innovation ecosystem about how they could develop their approach to supporting these models of inclusive innovation.

Image: 360ed Myanmar

1. The context for inclusive innovation policies in South-East Asia

Image: Vulcan Augmetics, Viet Nam

Inclusive innovation describes the pursuit of innovation that has social aims, and local context, at its heart. One can think of it as either – and both – a more inclusive approach to innovation, or a more innovative approach to driving social inclusion.

The myriad promise, and understandings, of inclusive innovation has led to the development of numerous approaches that consider the social purpose of innovation, the distribution of its benefits and the roles and power relationships of those involved.

The concept of inclusive innovation has roots in the 'appropriate technologies' movement which emerged in the 1970s, advocating the pursuit of context-relevant technologies in emerging economies. Inclusive innovation as a specific lexicon was established in 2007, when Mark Dutz used the phrase 'inclusive innovation' in a World Bank report on sustainable innovation in India. He defined it as "knowledge creation and absorption efforts that are most relevant to the needs of the poor".[5] Shortly after the term appeared, inclusive innovation was invoked by practitioners, academia, and policy makers across the ASEAN region.[6] An early study on the topic, published by the International Development Research Centre, identified "innovation in and for the base of the pyramid (BOP)" as a key issue for ASEAN.[7]

From 2008, the thrust of inclusive innovation efforts in ASEAN was clearly on engaging poor and rural communities. The focus on the BOP persisted in major initiatives in the region, such as the 2010 Krabi Initiative on Science, Technology and Innovation for a Competitive, Sustainable and Inclusive ASEAN.[8] The World Bank's Viet Nam Inclusive Innovation Project, the Bank's first inclusive innovation effort globally, was initiated in 2013 and emphasised sustainability, the environment and the BOP.

There has been a broadening in the engagement with inclusive innovation, as the term is increasingly invoked as a form of mission-oriented policy, with social distribution[9] and the importance of 'social missions'[10] at the fore. For innovation to matter, so the argument goes, there needs to be a social purpose.

Research has identified four themes that animate the recent proliferation of inclusive innovation policies:

1 **Production versus consumption orientation:** Producer-oriented strategies aim to activate more segments of society as producers of innovation. Consumption-focused initiatives, comparatively, focus on encouraging the development of technologies, business practices or services in order to solve social challenges for particular demographic groups, such as applying innovation to agriculture in order to improve crop production and benefit farmers.

2 **Criteria according to demographic, spatial and industrial characteristics.** Demographically-motivated efforts point to ascriptive groups, meaning disadvantaged groups according to factors assigned by birth, not achievement, such as gender, age, and minority or ethnic status. Spatial efforts aim to diminish the gap between urban/rural, wealthy/poor and core/periphery. The third realm is that of promoting innovation in traditional industry, which strives to infuse technological innovations or socially innovative approaches into firms' production processes.

3 **Technological innovation and/or social innovation.** Efforts focused on technological innovation speak of the need to insert a greater section of society into high-technology innovation, to help the marginalised better reap the gains to come from high value-added employment. Simultaneously, technologically-focused inclusive innovation initiatives strive to protect underrepresented groups from downside risks of emerging technologies. For example, innovation is associated with "unfavourable

or even dangerous working conditions (e.g. in recycling of heavy metals used in ICT), jobless growth (e.g. through automation of services) and environmental damage through pollution or degradation of ecosystems (e.g. overfishing due to the use of more efficient nets)".[11] Another brand of efforts promote social innovation, emphasising the benefits to come from new ways of organising communities and productive activities. In the realm of social innovation, the emphasis is on the novelty of the process rather than the technology.

4 **Distinct efforts across governments.** Within government, inclusive innovation policies have been initiated by numerous ministries, often without coordination across government. Ministries of Social Affairs and Education, for instance, act by way of active labour market policies, skills training, benefits transfer and redistribution more broadly.[12] Ministries of Science and Technology, without linking with the Social Affairs initiatives, strive to craft "distribution-sensitive innovation policy", in which R&D budgets are more dispersed, in demographic and spatial terms, across society.[13] The net result is that governments have an opportunity to better leverage their myriad policies to promote more inclusive innovation across society. Drawing on state-of-the-art scholarship, as discussed above, Nesta has developed an inclusive innovation policy framework.

It incorporates a focus on equitable outcomes and the need for more active governance of innovation, in view of the fact that innovation can increase as well as decrease inequality.

Image: 360ed Myanmar

The Nesta framework contends that innovation policies may be inclusive if they are concerned with:

- Focusing the **direction** of innovation towards inclusive goals: Policies that acknowledge the differing impact innovation may have on social groups and that attempt to meet the needs of wider society, including groups that are particularly marginalised or excluded.

- Broadening **participation** in innovation: Policies that seek to encourage broad participation in terms of who is employed as an innovator or in innovative sectors. Such policies may focus on demographic groups, regions, or economic sectors (including traditional industries) not typically included in mainstream innovation promotion.

- Inclusive **governance** of innovation: Policies that actively involve a wide section of society in setting priorities for innovation, and seek to regulate and govern innovation in a way that fairly shares its benefits and mitigates its tendency towards reproducing inequality.

Indicators associated with these different dimensions of more inclusive innovation policies are set out in **Table 1**. We have used this framework throughout the research as a basis for exploring questions of inclusive innovation with our stakeholders and interviewees.

Table 1: A framework for inclusive innovation policies[14]

Dimension of inclusion	Indicator of an inclusive approach
Direction of innovation What kinds of innovations are being supported through innovation policy interventions? Whose needs are being met?	Innovations that address societal challenges and needs
	Innovations that address the particular needs of disadvantaged social groups
Participation in innovation Which regions, sectors and demographic groups are being enabled to participate in innovation?	Underrepresented and disadvantaged demographic groups
	Disadvantaged or lagging regions and districts
	Low-productivity, traditional or informal sectors
	Social economy/community organisations, social enterprises, cooperatives
Governance of innovation Who sets priorities for innovation policy, and how are its outcomes managed?	Citizens or civil society are involved in setting priorities for innovation policy
	Citizens or civil society are involved in the regulation of innovation (e.g. emerging technologies)
	Measures to identify and mitigate the risks and negative impacts of innovation for particular groups
	Measures to more equitably distribute the rewards of innovation

2. Strategies for supporting inclusive innovation

Image: Disability Research and Capacity Development (DRD), Viet Nam

Our field research in Indonesia, Myanmar, the Philippines and Viet Nam revealed a number of different interventions that are being employed to encourage more inclusive forms of innovation across the ASEAN region. From these, we discerned three distinctive types of strategy being employed. Each approach is based on a different set of assumptions about how to create change, and involves different stakeholders in a range of ways. Each has various implications in terms of the outcomes, benefits and risks they may generate for various demographic groups, regions and sectors.

Table 2 captures the main features of these strategies, which we have named in order to give a sense of their animating principle. We outline their overall approach, which actors are involved in implementing them, who may benefit from them, and the links we see to promoting inclusive innovation.

The rest of this section then describes each strategy in more detail, illustrated by case studies gathered from our field research.

These three approaches are not mutually exclusive, and there is overlap between them in terms of their objectives and target beneficiaries.

However, there are some clear differences in terms of the vision of innovation that underpins them, and the roles of the different actors involved. These are described in more detail below.

Strategies for supporting inclusive innovation

Technology should save us
Technology-driven (often platform-based) solutions to social or economic challenges that are developed by innovative startups. These solutions often seek to address problems created by existing institutions or systems, or to fill needs that are not otherwise being met.

Innovation, everywhere
Typically government-led strategies which harness research and development to a project of national development where high-value activities are regionally distributed.

Innovation for the foundations
Typically (although not always) low-tech innovation that aims to improve the material well-being of poorer members of society, by strengthening their capabilities either as producers or consumers.

Table 2: Strategies for supporting inclusive innovation

Strategic approach	Who is involved?	Who benefits?	What makes this inclusive innovation?
Technology should save us			
Technology-driven (often platform-based) solutions to social or economic challenges that are developed by innovative startups. These solutions often seek to address problems created by existing institutions or systems, or to fill needs that are not otherwise being met.	• **Startups** (socially-oriented, technology-based startups) • **Funders** (government agencies, IGOs, banks, investors) • **Intermediaries** (incubators and accelerators) • **Civil society** (NGOs, citizens)	• **Excluded or underserved parts of the population** (enhanced services, choice, market access, tools and opportunities) • **Government** (new/scalable solutions to social challenges) • **Startups** (markets and customers for their solutions)	These activities are inclusive in that they are directed primarily towards solving challenges faced by those who are currently least well-served by innovation, rather than those who are already well placed to benefit (e.g. developing precision farming systems that can be easily used by individual farmers).
Innovation, everywhere			
Typically government-led strategies which harness research and development to a project of national development where high-value activities are regionally distributed.	• **National government** (typically Ministries of Science and Technology, Research, Industry etc) • **Regional governments** • **Companies** • **Local primary commodity producers** (such as farmers groups)	• **Research institutions** (access to funding) • **Local industry** (commercialisation opportunities) • **Wider local population** (potentially job creation in higher-value sectors, more demand/higher prices for primary products)	These activities are inclusive in that they use innovation to drive the development of regional economies and thus address inequalities between regions. This may be expected to create opportunities for local businesses and entrepreneurs. They may also give opportunities for primary commodity producers (e.g. farmers) to benefit from (or even directly participate in) commercialisation.
Innovation for the foundations			
Typically (although not always) low-tech innovation that aims to improve the material well-being of poorer members of society, by strengthening their capabilities either as producers or consumers.	• **Government agencies** (working closely with communities to respond to their needs, often in partnership with private sector actors) • **Social businesses** (developing affordable solutions/technologies for poor consumers)	• **Excluded and underserved parts of the population** (upgraded infrastructure, production technologies, other technologies for specific needs e.g. high-quality prosthetics or cleaner fuels)	These activities are inclusive in that they are directed towards solving issues for groups that are excluded or underserved. In some cases, communities experience human capital development, which enables them to become producers as well as users or consumers of innovation and to achieve greater productivity themselves (e.g. being able to work as a result of a prosthetic limb).

Technology should save us

This strategy involves the development of technology-based solutions to social or economic challenges such as waste collection, education provision, low incomes in the agricultural sector, or infrastructure issues facing excluded groups. It is based on the assumption that technology has a key role to play in addressing these challenges.

For example, Vulcan Augmetics is a Viet Nam-based startup that develops modular prosthetics to enable amputees to engage in work. Amputees as a group suffer from lower education and employment outcomes, and Vulcan sees access to employment as a major first step towards a more positive perception of amputees in society, and amputees' own belief in their potential. Specialised prosthetic modules enable easier participation in specific jobs, such as waitering.

Case study 1 shares the case of Disability Map, a Vietnamese smartphone application developed by DRD, using data to provide better information about accessibility of public buildings for the disabled community in Viet Nam.

The solutions often seek to address problems created by existing institutions or systems, or fill gaps such as a lack of accessible infrastructure or insufficient capacity within national or regional authorities.

Case study 1: DMap, Viet Nam

Overview
People with disabilities face significant challenges in travelling to work and to social events in Viet Nam. With a more effective means of planning journeys, people with disabilities will have improved mobility, which would, in turn, drive greater employment opportunities and the ability to participate in more social activities. Dr. Vo Thi Hoang Yen at the Disability Research and Capacity Development (DRD), developed Dmap (short for Disability map) as an app that helps people with disabilities plan their travel and navigate accessible buildings in Viet Nam. It was launched in Ho Chi Minh City, with the aim of being rolled out in other Viet Namese cities in the future.

Key features
Launched in April 2019, the app has information on the accessibility of thousands of buildings, including restaurants, shopping malls, entertainment centers, and religious buildings. The Dmap app was developed with the support of foundations, philanthropists, UNDP and USAID. The Dmap app offers an easily accessible tool, given that it is readily available on smartphones, and smartphone penetration rates are very high in Viet Nam. It offers information about the reality of the accessibility of public buildings in Viet Nam today, rather than waiting for the system itself to become more accessible.

Beneficiaries
Dmap constitutes a technological platform – readily accessible via smart phones – to improve mobility for people with disabilities and to drive greater societal awareness of the challenges facing people with disabilities. Dmap shows the systematic challenges encountered by people with disabilities, which could further motivate action on the part of national and municipal authorities to improve physical infrastructure.

For example, Recyglo is a Myanmar-based startup that seeks to develop platform-based and environmentally friendly solutions to waste management and recycling. It started as an 'Uber for recycling'[15] but has now expanded to provide services such as training to businesses and households on how to separate waste and recycle, as well as logistics and traceability solutions for waste management. Recyglo's founder, Okka Maung, told us that "Yangon's municipal government try, but they can only serve a quarter of the eight million people who live here. Lots of waste goes to landfill, which is bad for the environment and results in pollution." He acknowledged that "this sector is not fancy and it is not easy to make a lot of money in a short time, but it is a long term game."[16]

Some of the startups that we interviewed during our field research observed that they are trying to use technology as a means of enhancing conditions and opportunities for workers on lower incomes, rather than to automate the services they provide.

For instance, Recyglo uses their platform to connect local waste collectors in Myanmar to domestic and international waste buyers, rather than cutting them out of the value chain. In Viet Nam, a software startup called Enablecode is employing and training people with disabilities to work as freelance developers, coders, web designers and experts in AI business processes.

Image: DMap Viet Nam

As Enablecode's CEO Colin Blackwell told us:

> "Technology can solve so many problems, and people can work in technology without having to have technological backgrounds."[17]

Who is involved in this strategy, and how?

Socially-oriented, technology-based startups sit at the heart of this approach. In terms of their methods and business models, many of these startups would not look out of place in a Silicon Valley incubator. The difference lies in their missions, which are directed much more towards solving challenges faced by those who are excluded or underserved. For example, Hydro Plant is a tech startup in Myanmar that is developing cost-effective solar-powered smart Internet of Things (IoT) farm control systems for food processors, traditional, aquaculture and hydroponic farms. These are designed to help farmers reduce operation costs, increase operational efficiency and gain consistent quality outputs. They aim to support the creation of modern farms that can access and use farm-level, weather and market data to support precision farming. One of Hydroplant's key impact metrics is the number of farmers that they reach, so they need to focus on developing products and services that can be used by individuals who are typically less well-served by technology and innovation.[18]

Funders (such as government agencies, inter-governmental organisations, banks and investors) have a key role to play as potential sources of financial support and as customers for these startups. For example, the Lotus Hub – an impact investment fund operating across South-East Asia – works with Viet Namese social enterprises to improve their operations management in order to improve their ability to raise follow-on impact investment funding anywhere between $500,000 and $3,000,000.

Innovation intermediaries (such as accelerators and incubators) are also critical. They can provide a range of advisory and wraparound support services, signpost funding opportunities, and broker connections between startups and

key partners, such as investors or researchers. For example, the Hub of Inclusion for Innovation (HiFi) in the Philippines provides funding and non-financial support for the development of social impact projects that aims to include "the last, the lost, and the least" in the words of founder and director Abigail Mapua-Cabanilla. HiFi is attached to De La Salle University's College of Saint Benilde – known for providing accessible education to those living in poverty or with disabilities – and runs an incubation programme for startup founders who are working on innovative projects relating to inclusion.

Case study 2 describes the Yangon Innovation Centre, a government-initiated incubator that supports startups in Myanmar.

Finally, civil society or community organisations and wider members of the target population may be involved in this approach as relationship brokers or participants in the design, prototyping and implementation stages of the innovation process.

Who may benefit from this strategy, and in what ways?

Innovations developed by socially-oriented technology-driven startups are often designed to address the problems facing the most excluded and underserved members of society. They may combine this with a focus on environmental sustainability. For example Bambuhay in the Philippines is seeking to address the twin problems of plastic waste and low incomes in the farming community by supporting the farming and development of bamboo, which is a biodegradable and reusable alternative to plastic.

Beneficiaries of these types of innovations receive products and services that are more affordable and tailored to their needs and circumstances, improved market access, and enhanced opportunities to use innovative approaches and tools that can boost their incomes. The startups themselves can also benefit by generating knowledge, networks and power in relation to different economic activities. There is a clear

Case study 2: Yangon Innovation Centre, Myanmar

Overview

The Yangon Innovation Centre (YIC) was established in 2018, following a sustained campaign by a Minister within the Yangon regional government who was keen to support the development of a local innovation ecosystem. It was designed to be a place where young entrepreneurs could connect with technology companies and develop their capabilities and ideas. The Centre is managed by Seedstars, a global network of tech entrepreneur hubs that operates primarily in emerging markets. It has links back into the regional government, and is advised by a Yangon Regional Innovation Committee, which includes representatives of the private sector, as well as government officials.

Key features

The Yangon Innovation Centre aims to promote cross-sectoral innovation. U Ravi, the CEO of YIC, told us that the Centre "supports innovation from Yangon – not just innovation for Yangon – so we connect with people from the health system and agriculture, among other areas." There is also a focus on affordability, so that innovation capabilities can be spread more widely among the population. According to U Ravi, "the Yangon Innovation Centre wants to reduce barriers and has therefore adopted a pricing strategy that is attractive to locals and foreigners alike. We encourage everyone to become part of our community no matter their sector focus, background, religion, gender or ethnicity. We are an inclusive space that aims to foster and drive the innovation agenda for Myanmar."[19]

Beneficiaries

High-tech startups are the primary beneficiaries of the services offered by the YIC, but a technology focus is not a prerequisite for having access to the hub. It offers a range of services to the startups it incubates, including the provision of co-working space and a programme to promote investment readiness. It also runs events, training programmes and hackathons.

opportunity for governments to benefit from working closely with these startups, given their efforts to find solutions to systemic or complex social challenges.

Strengths and shortcomings of this strategy

One of the key strengths of this approach is the potential ability of startups to identify and respond to social problems in a responsive and iterative way, leveraging existing platform-based innovation models. They can be disruptive, and test and evaluate innovative solutions that governments and other actors can then take to scale, if there is clear evidence of impact.

However, there is a risk of an over-reliance on technological solutions for problems that might require more social or systemic responses. As observed by one interviewee, "the process of inclusive innovation could produce a new product or service, and should be social, but does not necessarily have to be technological. Technology could be a part of the solution, but…it is more about the purpose than the means."[20]

Another issue associated with this approach relates to the role that may be played by the beneficiaries of the ideas, products or services developed by technology-oriented startups. Founders of these organisations typically have a personal or professional connection to the challenges they are trying to solve, but do not always come from excluded or underserved communities themselves.

This potentially creates a situation where they may innovate for underserved communities rather than with them, and in doing so reinforce existing inequalities in terms of access to power and opportunities.

Image: Yangon Innovation Centre, Myanmar

Innovation, everywhere

The 'innovation, everywhere' strategy refers to government-led interventions which harness research and development to a project of national development, where high-value activities are regionally distributed. This strategy sees innovation as an economic process, designed to strengthen existing systems rather than encourage disruption. It is insofar as this strategy can share the rewards of innovation across regions, and generate benefits that can be shared by different social groups within those regions, that it can be considered inclusive.

Case study 3 presents an example from Indonesia, the Regional Innovation Cluster programme.

Who is involved in this strategy, and how?

These strategies tend to be led by national government, usually by a ministry primarily responsible for research and development, or industrial strategy. A role may also be played by regional governments. Other key partners are research institutions (typically universities

Case study 3: Regional Innovation Clusters, Indonesia

Overview

An important element of the Indonesian government's current innovation strategy has been the encouragement of regional innovation activity, notably through the Regional Innovation Clusters programme. This programme, led by the Ministry of Research, Technology and Higher Education (RISTEKDIKTI), brings together regional governments, research institutions, industry and local communities in an attempt to establish specialisations in Produk Unggulan Daerah (PUD), or high-value regional products. Funding is provided to research institutions to work with local industry and farmers' groups to develop and transfer innovative products based on existing local resources. In some cases this collaboration has taken the form of Science-Techno Parks, which co-locate research and industry activities.

Key features

To date, 14 high-value regional products have been developed and commercialised through the regional innovation cluster programme. A good example has been the development of innovation clusters around patchouli oil, prized for its use in perfumes, cosmetics and insecticides. While the Aceh province in Western Indonesia once supplied 70% of the world's patchouli oil, the industry has been heavily hit by civil conflict and natural disasters. More recently, a team of researchers at a university in the region have developed a novel distillation method for the oil which can increase production quantity and quality. A Centre for Patchouli Innovation Cluster has been established, with funding from RISTEKDIKTI, which has brought researchers together with government actors, industry and local Aceh farmers. The centre has supported the commercialisation of patchouli oil by SMEs and also involves farmers in the commercialisation process, enabling them to sell their products in store or online.

Beneficiaries

The most immediate beneficiaries of the regional innovation cluster are research institutions and firms which get the opportunity to commercialise the 'high-value regional products'. However, a major rationale for the clusters is the wider benefits they can create for ordinary people across Indonesia's regions. As Jumain Appe, the Director General for Innovation Strengthening puts it, when giving the example of the Coconut Innovation Clusters being supported in the North Sulawesi Region: "we need to improve the added value of coconut in order to raise the price of one piece of coconut…This means we will improve the income of our people in the local area." Innovation which transforms local products into "high-value regional products" has the potential to both create new jobs in higher-value sectors, and raise prices for local agricultural products, thus improving farmer's incomes.

or specialist research institutions linked to government ministries), industry, and in some cases primary commodity producers (such as farmers' groups). **Case study 4** shares the example of the Regional Inclusive Innovation Centres in the Philippines, which are currently being developed and implemented by the Department for Trade and Industry.

Who may benefit from this strategy, and in what ways?

The most obvious beneficiaries of the 'innovation, everywhere' approach are research institutions and firms that receive the opportunity to commercialise the 'high-value regional products'. However, core to their rationale is the possibility these activities generating benefits that are much more widely shared. Using R&D activities to generate higher value economic activities across regions holds the possibility of generating new, high quality jobs across the country, combatting the tendency of concentration of opportunities in the capital. If these high-value activities are linked to other parts of the local economy, there is also the potential for wider benefit. If the new products are based on the processing of locally-produced primary commodities, there is the possibility of driving up the prices of these commodities, and thus increasing the income of those who produce them (notably farmers).

Strengths and shortcomings of this strategy

This approach to inclusive innovation offers, in principle, a systematic means of creating regionally spread development and greater shared prosperity. The degree to which these benefits are realised will likely depend on the form it takes in practice. If the new industries and sectors promoted through 'Innovation, everywhere' type strategies create a significant number of new, good-quality jobs, and if there are strong linkages between them and other parts of local economies (e.g. if they are based on the processing of local agricultural products), there is good reason to believe that they may enable offer significantly shared benefits in regions that may have traditionally been neglected. However, if the promoted industries are highly capital intensive, creating few jobs, and if they lack any significant linkages to other parts of the local economy, it is unlikely that their benefits will be shared widely beyond

Case study 4: Regional Inclusive Innovation Centres, the Philippines

Overview

In July 2019, a new Philippine Innovation Act was signed into law. One of its flagship policy initiatives is a planned set of new Regional Inclusive Innovation Centres (RIICs), which will link government departments with industry and academic institutes across all regions of the Philippines to carry out market-oriented R&D and develop new products, business models and processes. Describing the impetus for setting up the RIICs, Rafaelita Aldaba from the Department of Trade and Industry explained that the government "wants to ensure that our innovation programmes reach the greatest number of people and as many areas as possible, in order to address poverty and inequality."[21]

Key features

The development of the roadmap and plan for the RIICs was a more bottom-up policymaking process than is typical in the Philippines. Consultation and validation workshops were run across many different regions of the country, bringing together representatives from different sectors of industry, academia and civil society to share their views and needs.

Beneficiaries

Four RIICs are being piloted in areas outside the capital city of Manila. These are currently virtual rather than physical, but the aim is to develop them into hubs that will enable startups as well as micro, small and medium-sized enterprises (MSMEs) across all areas of the Philippines to access support and develop collaborations with industry partners, universities, government agencies and other innovation intermediaries.

a narrow elite of politicians, researchers and business owners. If the new industry in question is heavily polluting to the local environment, this may also undermine its potential benefits for the population.

How inclusive this approach to innovation really is, then, will depend much on the types of industry and product which receive attention and support, which in turn draws attention to the process of priority setting and the question of who has a chance to set the agenda – i.e. the governance of innovation.

Image: Regional Inclusive Innovation Centres, the Philippines

Innovation for the foundations

This approach aims to enhance the quality of life and work in poor communities, sectors and regions. Projects might seek to improve workplace technologies, processes and institutions towards greater productivity and higher incomes, or upgrade the infrastructure of people's daily lives in order to enable a richer experience (be that via access to employment, or through better health). A key feature of this approach is its focus on social and economic context: interventions build up from where communities are, with contextually relevant and accessible technologies responsive to the kind of work around which local economies are already based.

Within this broader approach are projects founded on technologies and the particular instrumental benefit they bring for a demographic group. These innovations are characterised by their enabling effect, in that they provide better conditions from which marginalised or disadvantaged groups in society can engage more fully with work and the world around them.

For example, Gaz Lite, a liquefied petroleum gas (LPG) canister developed by Filipino firm PR Gaz to solve the problem of indoor air pollution from the use of solid fuels such as wood and charcoal in the home. Benefits are multi-faceted: better health, shorter cooking times, lower household expenses, and micro-entrepreneurship opportunities (PR Gaz has set up over 800 community stores as canister retailers).

Our research identified innovative activities that aim to improve traditional sectors in ways

Case study 5: Proximity Designs, Myanmar

Overview

Proximity Designs is a design company and international NGO that operates as a social enterprise. It was launched in Myanmar in 2004 to help farmers and agricultural workers access better technology, based on a perception that this need was not being met by the public and private sectors, or by humanitarian aid work. Proximity Designs develops affordable products for rural workers, involving them in the design process to make sure they meet user needs. Proximity aims to encourage other organisations to embark on similar activity and innovate in the low-cost sector, and move on to new projects once they see other players developing similar products.

Key features

The organisation has three business units: farm technology, farm advisory services (FAS), and Proximity Finance, which develops loan products for farmers. Proximity's R&D focus is on irrigation, aiming to address the challenge of water management in Myanmar where percentages of irrigated farmland are amongst the lowest in Asia. The FAS provision offers free advice at village level on topics such as seed selection, soil health, fertiliser usage, and pest and disease management. Over 100 field agronomists work in concert with local government to identify needs and implement changes to maximise yields and incomes. Proximity Finance has been running since 2014, predominantly lending to village groups but currently piloting individual loans.

Beneficiaries

As a social business, Proximity Designs is a profit-generating organisation. However, the primary beneficiaries of their activities are workers in Myanmar's agricultural sector, which represents around 70 per cent of the country's economy. We heard from Sreydao Lenain that "the agriculture sector is really important for poverty reduction in Myanmar so we want to make farmers participants in the innovation system and entrepreneurs."[22]

that increase their value for the local community. Pasar Sejahtera, described in more detail in the case study below, is a programme that introduces new processes to upgrade traditional markets as public spaces and strengthen their position in the local economy; business model and institutional innovations such as "waste banks" and cooperatives contribute to better livelihoods for market traders.

This upgrading of traditional sectors can also be technological, in the tradition of the 'appropriate technologies' movement. Government agencies such as the Centre for Appropriate Technologies Development (CATDev) in Indonesia, and social enterprises such as Proximity Designs in Myanmar (see **Case study 5**), work to apply contextually relevant technologies to improve agricultural production. This often includes a significant capacity-building element, as farmers and agricultural workers receive advice and training from agronomists to enable continuous improvement. Efforts are also often made to create stronger relationships between farmers and regional research and innovation centres, and amongst farmers themselves, to enable the sharing of knowledge and resources.

Who is involved in this strategy, and how?

This type of activity is supported by a range of different actors in the countries we studied. Whilst Indonesia has a dedicated government agency for appropriate technologies, CATDev, in other country contexts, this work is initiated by social businesses. Often it is the expertise

Case study 6: Pasar Sejahtera, Indonesia

Overview

Pasar Sejahtera ("prosperous market") aims to increase the competitiveness of traditional markets, or pasar, to contend with the growth of modern supermarkets. Improvements to pasar as physical spaces encourage more local people to choose to shop here rather than in modern supermarkets (which are less tied into the local economy and community). This brings potential benefits to local economic growth and community cohesion, as well as health and wellbeing.

Key features

Improvements in waste management processes, in the form of inorganic waste banks and composting facilities, help markets meet hygiene standards, and provide financial opportunities for traders – they receive cash in return for waste delivered to the banks, which they can then use to build their business. Other measures include the formation of trader and labourer cooperatives, and education on financial literacy, health, and sustainability. The programme is funded and delivered by independent foundation Yayasan Danamon Peduli (YDP) in partnership with the Ministry of Health and the Ministry of Trade and Industry, and has been running since 2010 in 13 sites across Indonesia. Both ministries had previously been involved with pasar in limited capacities, but local government funding for development was very low. YDP provides initial funding and advice on financial infrastructure elements such as waste banks and cooperatives, while Ministries provide training in their areas of expertise. Ministry of Health involvement also includes a mandatory clinic within the market space, and a radio station informing market users on health matters.

Beneficiaries

12 million people in Indonesia rely directly on traditional markets for their income, with 50 million (almost a fifth of the population of Indonesia) relying on them indirectly. This makes the sector the second biggest in terms of employment after agriculture. Efforts to improve livelihoods here thus have the potential to bring great benefit to a significant number of households in Indonesia. President Joko Widodo identified traditional markets as a part of his Nawacita ("nine-point") development programme for Indonesia. This election pledge has been developed into a national market revitalisation programme (Revitalasi Pasar Rakyat) led by the Ministry of Trade, launched in 2015 with the aim of developing 5,000 markets across Indonesia by the end of Widodo's term in 2019.

of multiple actors working together, and closely with communities, that leads to success. For example, the Pasar Sejahtera programme (see **Case study 6**) leveraged the financial expertise of Yayasan Danamon Peduli (a non-profit foundation responsible for the corporate social responsibility activities of Bank Danamon, one of Indonesia's largest banks) along with input from the Ministry of Health and local government.

Who may benefit from this strategy, and in what ways?

Those working in low-wage sectors benefit from improved livelihoods. Those experiencing particular barriers to participation in economic life, such as those living without electricity or clean fuels, benefit from innovative products designed specifically for their needs. Further economic opportunities can arise from the introduction of these new technologies, such as in the case of Gaz Lite, mentioned above, which sets up local micro-entrepreneurs to sell the product, or Pasar Sejahtera, which improves traders' financial stability through an innovative approach to waste management.

Strengths and shortcomings of this strategy

A key strength of this approach is the emphasis on community embeddedness: most projects in this area make a great effort to understand target communities (through methods such as design thinking) and work closely with them in creating solutions that are responsive to their needs. This type of activity therefore has the potential for lasting effects on its target communities, particularly when programmes are oriented towards institutional and ecosystem change along with technology transfer (as in the case of CATDev, Proximity Designs, and Pasar Sejahtera).

The involvement of multiple stakeholders (government, IGOs, charitable foundations, social enterprises) can be a great strength of such projects, allowing a range of expertise and capabilities to drive the development and implementation of successful initiatives. Several interviewees noted the importance of government support for projects initiated from outside government, or local government support for projects initiated centrally.

However, multi-stakeholder involvement can be a shortcoming if there is variable understanding between these stakeholders over project aims and processes. For example, the Viet Nam Inclusive Innovation Project (VIIP), a World Bank-led project launched in 2013, largely failed to materialise due to mismatched expectations of the main partners (the World Bank, and two government bodies, the Ministry of Planning and Investment (MPI) and the National Foundation for Science and Technology Development (NAFOSTED)). Specifically, the different teams struggled to agree and operationalise a shared understanding of inclusive innovation, which inhibited the distribution of project funds.

The policy imperative: at the outset it is essential to ensure shared understandings – across stakeholders – of how to conceptualise inclusive innovation and agreed expectations for what it is expected to look like in practice.

Image: Pasar Sejahtera, Indonesia

3. Conclusions and policy directions

Image: 360ed, Myanmar

This research set out to investigate the models of innovation that are being applied across the ASEAN region to address key development and sustainability challenges, and to see whether we could identify a distinctive regional approach to supporting inclusive innovation. Our literature review, stakeholder interviews and field research shows there isn't a single ASEAN model of best practice. Instead policymakers, and actors in other sectors, are combining tools, ideas and techniques from a range of sources, creating new strategies to promote innovation and spread its benefits more equitably.

We observed three key types of inclusive innovation initiatives, which we characterise in the following way:

- **Technology should save us:** mostly bottom-up entrepreneurial initiatives seeking to develop technological solutions to societal challenges (i.e. directing innovation towards achieving inclusive outcomes).

- **Innovation, everywhere:** mostly top-down government initiatives seeking to ensure that high-value innovative activities are regionally distributed (i.e. encouraging the participation of more people, places and sectors in the innovative economy).

- **Innovation for the foundations:** a mix of top-down and bottom-up activities seeking to improve the quality of life and work for those in the poorest and most marginalised communities (i.e. supporting the development of contextually-relevant innovations that address some of the root causes of poverty and inequality).

A key similarity between these three strategies is their focus on developing initiatives, products, services and business models that have the potential to create value and opportunities for those who face structural disadvantages in becoming either consumers or producers of innovation. This applies to places as well as people, and to sectors of the economy that are often neglected in discussions of 'frontier technologies' or the 'fourth industrial revolution'.

These types of outcomes are not always prioritised by mainstream innovation policies, which are often more focused on reinforcing existing national strengths and centres of excellence, rather than democratising access to the power, knowledge and tools needed to innovate.[23] There is inspiration to be taken here for innovation policymakers everywhere, irrespective of the developmental stage of their national economy.

However, these strategies still feel emergent rather than fully-formed. Our research found a clear interest on the part of government policymakers and other actors in the ASEAN region to use innovation as a means of addressing societal challenges and bringing more people, places and sectors into innovation ecosystems. But we also observed a general lack of coordination within governments on this agenda, and a disconnect between what is happening inside and outside government. Many of the socially-oriented tech startups we spoke to in the region felt like they were operating in a 'grey area' – without the funding, policies and regulations required to really develop or scale up their solutions.

Drawing on our analysis, we suggest ways in which governments can build on and strengthen these strategies in order to develop a more coherent and impactful approach to supporting inclusive innovation.

1 **Coordinate cross-government action on inclusive innovation**
"It is important to ensure that science, technology and innovation (STI) is feeding economic growth and development processes."[24]

A key issue preventing the emergence of more inclusive innovation policies is that responsibilities for inclusion and innovation often sit in different parts of government. Innovation promotion tends to be the responsibility of ministries or departments that oversee science and technology policies or economic and industrial development. These departments tend to prioritise supporting the development of new technologies, and building up regions, sectors and firms that already have high economic growth potential. Meanwhile, responsibility for questions relating to inequality, poverty, and social growth tends to sit within ministries

of social affairs. Cross-fertilisation of ideas and solutions between these areas could be a powerful stimulus for inclusive forms of innovation, but the mechanisms to allow for collaboration across government in these areas are often underdeveloped or lacking.

In the Philippines, the government has tried to address this challenge by framing the country's new innovation law as an 'inclusive innovation industrial strategy'. Government stakeholders told us that the new law's intention is to make the Filipino innovation system more cohesive and to ensure that STI policies promote social inclusion, as well as technological invention. Within the Philippines, the National Economic Development Authority has been tasked with creating a cross-government National Innovation Council, which will bring together all the main government departments with innovation responsibilities to increase R&D in both high value sectors and to address social challenges – particularly those that affect low income groups.

2 **Tailor innovation support models to local needs**

"Myanmar is very different from other countries – so we need our own approach to development. People are crazy about tech but the infrastructure isn't there yet. We're at a stage before that."[25]

There is enormous pressure – in the ASEAN region and more widely – to build local Silicon Valley-styled ecosystems. Such clusters promise a panacea; to advance disruptive innovation, which in turn boosts productivity and spurs job growth. In order to do so, policymakers may study which policies have been pursued in the Valley, or more proximate innovation clusters. However, copying what has worked elsewhere is unlikely to prove effective locally, if initiatives are not tailored to fit the local economic conditions, social values, and needs of a country's government and its people.

Multi-stakeholder dialogue processes can advance a shared understanding of inclusive innovation; one that goes beyond seeing innovation as synonymous with technological advance, and explores structural impediments, such as education, to wider society's participation in innovation. For example, a workshop organised by the UNDP in Hanoi in December 2019 brought together government policymakers from two ministries, union representatives, and researchers to define inclusive innovation policy in the Viet Namese context. Participants explored which international models could be relevant to the local context, as well as how existing local policy efforts could be adapted to better drive innovation that delivers economic and social benefits. One of the key takeaways was that innovation is currently too narrowly understood in relation to science and technology policy. This links to insights from our case studies, which suggest that advances in productivity and societal welfare can also come from the development of innovative but non-technological processes and products.

3 **More inclusive policymaking processes**

"Government agencies…need to get closer to the ground and really start involving the beneficiaries of their programmes."[26]

A key observation from our field research in the ASEAN region – which fits with what we have seen in other parts of the world – is that there are limited efforts to involve those who stand to benefit from inclusive innovation policies and activities, in their design and governance. This risks creating a system where people are innovated for, but where they have little agency of their own to become producers as well as consumers of innovation. To deliver positive impact, the policymaking process needs to begin with giving a voice to those who are impacted, to understand their objectives and obstacles.

Final thoughts

This research shows that there is a significant emerging field of inclusive innovation practice in the ASEAN region that is seeking to answer some of the big challenges posed by the SDGs, but that it requires nurturing on the part of government policymakers, funders, innovators and citizens alike. There are opportunities for shared learning across this region and more widely, which networked organisations like the UNDP – for example, through their Accelerator Labs – are well placed to support. We hope that this report will contribute to this agenda, and that it will prompt others to share ideas and further case study examples to advance the development and dissemination of the strategic typology.

Image: Proximity Designs, Myanmar

Endnotes

1 Interview with Hla Hla Win, 360ed, Myanmar

2 The members of the Association of South-East Asian Nations are Indonesia, Thailand, Singapore, the Philippines, Malaysia, Viet Nam, Brunei, Cambodia, Myanmar (Burma), and Laos

3 This work was commissioned to support the ASEAN-China-UNDP Symposium on Innovation in Achieving the SDGs and Eradicating Poverty, held in Ha Noi, Viet Nam on 4–5 September 2019. For more information see www.innov4sdgs2019.org/

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14 Adapted from Stanley I., Glennie A. & Gabriel M. (2018) How inclusive is innovation policy? Insights from an international comparison, London: Nesta

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16 Interview with Okka Maung, Recyglo, Myanmar

17 Interview with Colin Blackwell, Enablecode, Viet Nam

18 Interview with Pwint Pwint San and Tin Thandar Oo, Hydro Plant, Myanmar

19 Interview with U Ravi, Yangon Innovation Centre, Myanmar

20 Interview with Dr. Ca Tran Ngoc, National Institute for Science and Technology Policy and Strategy Studies (NISTPASS), Viet Nam

21 Interview with Rafaelita Aldaba, Department of Trade and Industry, The Philippines

22 Interview with Sreydao Lenain, Proximity Designs, Myanmar

23 See Unger R., Stanley I., Gabriel M. & Mulgan G. (2019) Imagination Unleashed: Democratising the knowledge economy, London: Nesta

24 Interview with Richard Ballester, National Economic Development Authority (NEDA), The Philippines

25 Interview with Okka Myo, Impact Hub Yangon, Myanmar

26 Interview with Emil Tapnio, PhilDev Labs, The Philippines

Appendix: Methodology and list of interviewees

Our study took a qualitative research approach, comprising a review of literature and policies, semi-structured interviews and field visits to identify and analyse emerging models of inclusive innovation across the ASEAN region (undertaken in August–September 2019). To glean a representative picture of the region, we focused on four case study countries: Indonesia, Myanmar, the Philippines and Viet Nam. The main research activities included:

- **Literature review:** a rapid review of relevant political, policy, academic and other research on inclusive innovation and development in the ASEAN context, with a particular focus on policy statements that apply to the region.
- **Stakeholder interviews:** interviews with policymakers, social entrepreneurs and experts in each case study country. We took a 'snowball sampling' approach to finding interview subjects – starting with individuals already in the networks of the research team and UNDP, and then asking for recommendations of other individuals to speak to.
- **Case study research:** a review of high-level policy statements of each of the selected countries with respect to innovation promotion, social inclusion and poverty reduction and the collection of local stories of practice to inform and inspire policymakers with examples of what is already happening on the ground.
- **Action research:** a research session with participants at the ASEAN-China-UNDP Symposium on Innovation in Achieving the SDGs and Eradicating Poverty, held in Ha Noi, Viet Nam on 5 September 2019 that used a group exercise as well as interactive presentation software tools to identify insights, ideas about priorities and case studies from their own contexts. We also developed a short research questionnaire that was shared with participants at the conference, and more widely across our collective networks.

The names and organisational affiliations of our interviewees are listed below, along with the date on which they were interviewed. We are grateful to them for sharing their time and their ideas with us.

Indonesia

Agus Triwahyuono & **Jenik DS Andreas**, Yayasan Danamon Peduli, 2 September 2019

Pamitra Wineka & **Grace Dwitiya Amianti**, TaniHub, 2 September 2019

Jumain Appe, Ministry of Research and Technology (RISTEKDIKTI), 3 September 2019

Manaek Simamora, Indonesian Institute for Sciences (LIPI), 3 September 2019

Sophie Kemkhadze & **Joanne Manda**, UNDP Indonesia, 3 September 2019

Rachmini Saparita, LIPI, 4 September 2019

Mona Usmani, Centre for Innovation Policy and Governance (CIPG), 4 September 2019

Myanmar

Peter Batchelor, UNDP Myanmar, 9 September 2019

Okka Myo & **Kyaw Myat Soe**, Impact Hub Yangon, 9 September 2019

Debbie Aung Din & **Sreydao Lenain**, Proximity Designs, 9 September 2019

Hsan Winn Hlaing & **Joao Dutra**, Phandeeyar, 10 September 2019

Suhail Baht, Ooredoo, 10 September 2019

Anders Kirstein Møller, Myanmar Development Institute, 11 September 2019

Peter Crowhurst, British Chambers of Commerce, 11 September 2019

Peter Brimble, DaNa Facility, 11 September 2019

U Aung Naing Oo, Ministry of Investment and Foreign Economic Relations, 11 September 2019

Win Thaing Oo, Department of R&I, Ministry of Education, 12 September 2019

Hla Hla Win, 360ed, 12 September 2019

Ravi Chhabra, Yangon Innovation Centre, 13 September 2019

Doris Clemenz & **Mo Lebekwe**, Seed Stars, 13 September 2019

Okka Maung, Recyglo, 13 September 2019

Pwint Pwint San & **Tina Oo**, Hydroplant MM, 13 September 2019

The Philippines

Kristine Mae Magtubo, Veris Tech, 30 July 2019

Richard Ballester, National Economic and Development Authority (NEDA), 9 August 2019

Peter Immanuel D. Tenido, De La Salle University Innovation & Technology Office, 21 August 2019

Goldy Yancha & **Emil Tapnio**, PhilDev Labs, 27 August 2019

Gonzalo Serafica, Senior Consultant to RTI, implementing USAID STRIDE, 28 August 2019

Rafaelita Aldaba, Department of Trade and Industry (DTI), 28 August 2019

Andrew Parker, UNDP Philippines, 29 August 2019

Carlo Arcilla, Department of Science and Technology (DOST), 28 August 2019

Rior Santos, Department for Information and Communications Technology (DICT), 29 August 2019

Sreeni Narayanan & **Mukesh VS**, Asia Society for Social Improvement and Sustainable Transformation, 29 August 2019

Dir. U-Nichols Manalo, System-wide Climate Change Program of the Dept. of Agriculture (DA), 30 August 2019

Abigail Mapua-Cabanilla, Hub of Innovation for Inclusion, 30 August 2019

Viet Nam

Le Vu Cuong, Project 1516, 6 August 2019

Rafael Masters, Vulcan Augmetics, 6 August 2019

Vo Thi Hoang Yen, DMap, 7 August 2019

Nguyen Quynh Anh, Viet Nam Institute of Science, Technology and Innovation (VISTI), 7 August 2019

Ca Tran Ngoc, VISTI, 7 August 2019

Nguyen Van Tang, National Technology Innovation Fund (NATIF), 9 August 2019

Phan Huong, Newton Fund Viet Nam, 12 August 2019

Colin Blackwell, Enable Code, 13 August 2019

Smita Kuriakose, World Bank, 23 September 2019

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