Strengthening Myanmar's agricultural technical and vocational education and training system

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Colophon

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Foreword

In 2015 I conducted a fact finding mission on the request of the Directorate General for Agriculture in Myanmar and the Netherlands Ministry of Economic Affairs. During my first visit to Myanmar I visited several state agricultural institutes (SAIs) in order to analyse demands, capacities, constraints and opportunities for the further strengthening of agricultural vocational education in Myanmar.

The recommendations of this fact-finding mission formed the basis of the Niche MMR277 project 'Strengthening of Vocational Education and Training for Food Security'. Since then, significant steps have been taken, thanks to fruitful collaboration with partners in Myanmar. Professional profiles for entrepreneurs and extension workers have been described, the SAI curriculum has been revised and the ways of teaching, coaching and assessment have been changed. Educational programs have been redesigned, based on regional demands and regional biotic and abiotic circumstances. Both the national and the regional agricultural advisory boards will be instrumental in creating stronger connections between education and society, including the agri-food sector. There are now ICT facilities at the schools, with the 'modern classroom' as a gem, a Myanmar gem, at 6 pilot schools. A fundamental element has been the investment in human capital, with the Educational Support Team members as change agents.

In January 2017 I visited the Permanent Secretary of the Ministry of Agriculture, Livestock and Irrigation (MOALI) for an open discussion about the future of agricultural education in Myanmar. This included curriculum development; the alignment of SAI education to university education; regional diversification; and the alignment of the programme to regional needs. Interestingly, one of the action items from the report of that meeting was *'the development of a White Paper/ road map for a longer-term agri-education vision in Myanmar'*.

Now the time has come for the White Paper that you have in your hands to come to life. The document is not only a reflection of the experiences and visions of the Dutch experts, but also the result of extensive consultations and intensive dialogues with key figures, stakeholder representatives, teachers and headmasters in Myanmar. The White Paper presents a future scope of the system of agricultural technical vocational education and training (ATVET) as conducted at

pre-university level by the SAIs. Recommendations are identified and formulated to continue the work started in 2015. I hope the White Paper will contribute to the efforts of further strengthening agricultural education. A road map? Yes, in general, but the stakeholders have to walk together. That will certainly happen, because looking at past performance, the enormous passion and involvement of MOALI officers and SAI staff is the key to further success.

The White Paper presents agricultural vocational education as a gem, a Myanmar sapphire, connecting government, agrobusiness, civil society and research and education. The sun is free, but keep the sapphire in that light: it will shine in many colours. I hereby express the strong wish that MOALI and ATVET seize the opportunities that exist in order to prepare the young generation for a valuable existence.

Arie de Jong, project coordinator, Niche MMR 277 and OKP MMR 10047.

Introduction

This paper was written on the request of MOALI and the SAI Division, with the purpose of reflecting on potential scenarios and pathways by which the Myanmar Government can promote development of the agricultural sector through agricultural technical and vocational education and training (ATVET).

The document presents an overview of how Myanmar's ATVET system can support the transformation of the agricultural sector by generating large numbers of highly skilled and knowledgeable male and female agri-professionals to drive the development and functioning of a resilient, prosperous, inclusive, economically strong and ecologically sound rural economy.

The White Paper presents a review of the current and future scope of the ATVET system as conducted at pre-university level by the State Agricultural Institutes (SAI). Additionally, attention is paid to the necessary bridging of the gap between SAI education and training and higher education at Yezin Agricultural University (YAU).

A wide variety of sources of information were taken into consideration for this White Paper. The process included individual interviews with key stakeholders, focus group discussions, and interactive multi-stakeholder workshops at different levels and scales, geared at integrating viewpoints and historical perspectives from a wide variety of stakeholders. In addition, a number of important policy documents and strategies were consulted.

The ideas and considerations presented in this paper are the result of a common effort of by the staff of the Department of Agriculture (DOA)/SAI, MOALI and a diversity of stakeholders from Myanmar's agricultural sector. They provide a series of suggestions that can be used to inform decision-making and to identify which policies to prioritize in order to create a robust, resilient and reliable system for ATVET, to ensure that Myanmar can develop the qualified mid-level skilled labour force that will further strengthen and dynamize sustainable and inclusive economic growth.

Abbreviations

ADS	Agriculture Development Strategy
AERES	AERES University of Applied Sciences
ARD	Agricultural Mechanization Department
ASEAN	Association of South East Asian Nations
ATVET	Agricultural technological and vocational education and training
AQRF	ASEAN Qualification Reference Framework
CARTC	Central Agricultural Research & Training Centre
DAR	Department of Agricultural Research
DOA	Department of Agriculture
DRD	Department of Rural Development
FAO	The Food and Agriculture Organisation of the United Nations
GIZ	German Corporation for International Cooperation
GDP	Gross domestic product
HRD	Human resource development
ILO	International Labour Organization
IWUMD	Irrigation and Water Utilization Management Department
JICA	Japan International Cooperation Agency
KOICA	Korea International Cooperation Agency
KWBPF	Korea World Bank Partnership Facility
LIFT	Livelihoods and Food Security Fund for Myanmar
MOALI	Ministry of Agriculture, Livestock and Irrigation
MDF	MDF Training and Consultancy
MOE	Ministry of Education
NESP	National Education Strategic Plan
NESAC	National Economic & Social Advisory Council
NSSA	National Skills Standards Authority
NUFFIC	Dutch organisation for internationalisation in education
SAI	State Agricultural Institute
TVET	technical vocational education and training
UMFCCI	Union of Myanmar Federation of Chambers of Commerce & Industry
UNESCO	United Nations Educational Scientific and Cultural Organization
UNOPS	United Nations Office for Projects Services
WUR	Wageningen University & Research
YAU	Yezin Agricultural University

Executive summary

Myanmar is engaged in a process of political and economic liberalization that will transform the country's economy and society and see the nation emerge as an important economic entity in South East Asia and the wider regional and global economy. The country's rich natural resource endowment, abundant labour force and strategic geographical location are fundamental cornerstones to drive sustainable agricultural growth and rural economic development.

Over the last decade, there have been favourable conditions for Myanmar to position itself as a significant player in one of the fastest growing regional economies in the world. Strategic investments in critical sectors of the economy will define and shape the manner in which Myanmar handles the opportunities and challenges of a rapidly growing national economy and booming regional and international trade.

Agriculture is the backbone of Myanmar's economy. Approximately 70% of Myanmar's population lives in rural areas and their livelihoods are intimately connected with agriculture.¹ Myanmar's rural economy accounts for about 28% of GDP and more than 65% of employment. According to the third quarterly report of Myanmar's labour force survey in 2018, Myanmar's agricultural sector is the largest economic sector, providing employment for over 50% of the country's labour force.² Strategic investments in the agricultural sector will allow Myanmar to position itself as a key stakeholder in the regional agri-food sector as an internationally competitive producer, processor, service provider and trader, thereby boosting rural prosperity and reducing poverty. Development of the agricultural sector can drive inclusive regional economic growth and can have a strong impact on poverty reduction, food and nutrition security, rural and urban employment generation, and rural economic development.

In order to fully exploit the growth potential of the agricultural sector, Myanmar has to invest in labour market responsive institutional and social capital that enables stakeholders to access and invest in features of modern agricultural production systems, agricultural technologies and input supply systems, post-harvest value addition, and food safety and food quality assurance systems attuned to inter-

Rural economic development is strongly related to the performance of Myanmar's agricultural sector.

HRD strategies in the should support the economic transformations taking place in Myanmar.

¹ Myanmar Sustainable Development Plan (2018-2030)

² ILO, 2020

national trading practices and protocols. This requires investments in education, research, infrastructure, equipment and institutional strengthening. Experience from countries transitioning from an agrarian economy towards more diversified economies with active industry and service sectors illustrate the importance of investing in human resource development to fill the skills gap and support the structural economic transformation already taking place.³

Agricultural technical and vocational education and training (ATVET) should play a fundamental role in Myanmar's economic and social development as a driver for productivity enhancement, poverty reduction and employment.⁴ Committed policy support and adequate funding for agricultural education, research and development will be required to cater to emerging demand for skilled labourers and mid-level agricultural technicians operating throughout the food supply chain, both on- and off-farm.⁵

Trends towards more diversified production systems focusing on high value and high quality agri-food products will require a skilled and competent labour force. This labour force requires adequate skills and competences to drive and support the envisioned developments

Agricultural education requires adequate policy support and budget allocation.

³ *ibid.*

⁴ Pavlova, 2014

⁵ ADB, 2015

beyond core production activities. This will allow for the establishment of complementary business activities such as agro-input supply, post-harvest value addition and processing, transport and storage, agri-food health and safety, market access, financial services, advisory services, ICT support and others. By further aligning job creation efforts at the level of the Union and at a regional level, ATVET can design tailored and demand driven programmes to cater to the demands of the labour market and support inclusive rural development processes.⁶

ATVET is a key driver of inclusive economic and social development.

Myanmar's ambition to promote socio-economic development places human capital development as one of the key cornerstones for inclusive economic growth. The Government of Myanmar will need to commit to an ambitious agenda for human resource development that includes strengthening foundational skills, modernizing didactical and pedagogical approaches, and creating stronger linkages with private sector stakeholders and regional development priorities. Myanmar is a signatory of the Association of South East Asian Nations (ASEAN) Qualifications Reference Framework (AQRF). It is therefore positioned to align ATVET to ASEAN and to international standards offering certified qualifications relevant to industry needs and requirements.

HRD requires public support and strong partnerships with sectoral and regional stakeholders.

This White Paper contains recommendations to support Myanmar's SAIs to become key rural transformation hubs driving social and economic development in the agri-food sector. Insights for this White Paper were obtained from a number of workshops, multi-stakeholder dialogues, key informant interviews and capacity building processes. It was supported by a NUFFIC-funded project which was implemented by MOALI together with a consortium of Dutch knowledge institutes, private sector partners, implementing agencies and 15 SAIs.

⁶ ILO, 2020

Ambitions for agricultural development

Myanmar's agriculture-related policy environment and strategies

The Government of the Republic of the Union of Myanmar has set up a series of short, medium, and long term development policies, designed to support and catalyse the development of the agricultural sector through targeted investments in a variety of fields. Agricultural education, research and development together with private sector involvement and post-harvest value addition through micro, small, and medium size enterprise development are key elements. This chapter of the White Paper provides a brief overview of existing policies that are directly and indirectly related to the agricultural sector.

Myanmar's national economic policy (2016) supports a development model in which the agricultural sector and the industrial sector drive inclusive development and create employment opportunities. Being a significant contributor to Myanmar's GDP, agricultural development is considered a key priority for the Government of Myanmar as it can support national food and nutrition security, increase foreign exchange and exports, and trigger inclusive rural agro-economic development.⁷ The expansion of the private sector is considered the main driver of economic growth. The small and medium-sized enterprise sector and the agriculture sector are prioritised as important sources of job generation, together with the manufacturing and service sectors. Human capital development through improvement and the expansion of technical and vocational education and training (TVET) is considered a key priority in a number of strategic documents.⁸

Myanmar's Agriculture Development Strategy and investment plan (ADS) (2018 – 2023) highlights the policies, the physical and institutional infrastructures, and the human resources capacities required to generate a more productive, sustainable, inclusive, and competitive agriculture and food sector.

The ADS states that that accelerated growth of the agricultural sector requires solid collaborative relationships among government, multiple ministries, regional authorities, farmers, farmer organizations and private enterprises.

⁷ OECD, 2014 and 2016

⁸ Myanmar Sustainable Development Plan 2018 and Myanmar National Education Strategic Plan.

The ADS emphasises the need for targeted investments in three strategic areas:

- **governance:** enhanced governance and capacity of institutions responsible for agricultural development
- **productivity:** increased productivity, food and nutrition security, and farmers' income
- **competitiveness:** enhanced market linkages and competitiveness.

The ADS stipulates that the budget allocated to MOALI is distributed between a series of departments and units. Three departments, namely the Department of Rural Development (DRD), the Irrigation and Water Utilization Management Department (IWUMD) and Agricultural Mechanization Department (AMD), together receive 95% of MOALI's capital budget. The combined activities of research, development and education receive less than 5% of MOALI's budget. The Department of Agriculture (DOA) that oversees the functioning of Myanmar's SAIs receives 3.5% of the budget assigned to MOALI.

Myanmar's national export strategy (2015-2019) gives priority to key sectors where investment in production, value and quality addition have the potential to provide broad-based socioeconomic development to the people of Myanmar. The strategy follows a model where poverty alleviation is strongly embedded in rural economic development and income growth. The strategy is currently being updated for the period 2020 – 2025. The strategy primarily focuses on support services (market information systems, regulatory and quality assurance systems aligned to international market, access to finance, etc.) to enhance the volumes, quality and value of Myanmar's export products. Within the agricultural sector, the current export strategy focuses on rice, beans, pulses, oilseeds and rubber. Fruits and vegetables, flowers and agro-food processing will be added as priority sectors for investment in the coming years. The strategy aims to strengthen and promote the development of Myanmar's micro, small and medium sized enterprises, promoting rural development and entrepreneurship through improvements in productive capacity, innovation and technology adoption.

Myanmar's Sustainable Development Plan (MSDP) (2018- 2030) highlights the importance of investing in education and training in agriculture and food sectors, allowing technical and vocational education to respond to the evolving needs of farmers and the private sector. The plan strongly advocates career-relevant education streams, including labour-market driven TVET trajectories.

The MSDP emphasises the need to:

- increase the ability of all people to engage with government through more inclusive, participatory and representative decision making
- strengthen quality assurance mechanisms of agricultural education (MSDP pillar 3 goal 4 strategy 4.1.4)
- develop 21st century-ready TVET curricula that meets current and future private sector needs (strategy 4.1.5)
- improve the quality of and access to higher education through improved teacher training (strategy 4.1.7).

Myanmar's National Education Strategic Plan (2016-2021)

stresses the significance of TVET in generating large numbers of skilled employees that are needed in the agricultural, manufacturing and industry sectors. This strategic plan emphasises the importance of cooperation and coordination between business entrepreneurs from the private sector, TVET providers and ministries. The strategic plan outlines a series of pathways geared towards the generation of large numbers of qualified agricultural workers and technicians.

Myanmar's Multi-Sectoral National Plan of Action on Nutrition (MS-NPAN 2018/19-2022/23) focuses on the importance of multi-sectoral coordination in order to target improvements in food and nutrition security for Myanmar. The sectoral contribution of MOALI has been coined in terms of an increased focus on production diversification through the promotion of nutrition dense foods such as vegetables, and animal based foods (fish and poultry). Additionally MOALI contributes to improved nutrition through the generation of income and employment opportunities through rural development and efforts to improve food safety and quality assurance.

All the above policies emphasise the importance of the private sector and entrepreneurial driven progress as fundamental catalysts for inclusive rural development. Furthermore, all policies acknowledge the need for high quality human capital development through agricultural education that is tailored and aligned to the demand of the labour market. Investing in agricultural education and agricultural entrepreneurship is expected to reduce unemployment, support rural entrepreneurship and agricultural development and drive Myanmar's agricultural economic development.

Agricultural technical and vocational education in Myanmar

An introduction

Myanmar's agricultural sector is characterized by low levels of average yield and labour productivity.⁹ Causes include a lack of up-to-date knowledge and limited usage of agricultural technology. There is a scarcity of skilled labour throughout the sector.

For farming households it is challenging to generate a decent income based on agricultural production activities. People are therefore increasingly searching for alternative sources of income in other sectors of the national economy and abroad. Large numbers of economically active youngsters are migrating to neighbour countries in search of employment. This, in turn, strongly affects agri-businesses, who find it challenging to find skilled labourers.¹⁰

At present, most of the current generation of farmers have enjoyed little formal general education, nor have they had vocational training on agricultural production practices and/or farm technology. After attending primary school, rural youth can qualify for education at an institute for higher education if the grades they obtain in a matriculation exam are sufficient, and if they manage to acquire adequate funding. At a national level only 0.5 % of students that finalize secondary school enrol in TVET programs.¹¹ For those who aspire to become farmers or to find employment in the agricultural sector, there are opportunities to apply for admission at one of the SAIs or at the Yezin Agricultural University (YAU).

There is a growing demand for agricultural education and training. In 2017 a total of 10800 individuals applied for admission at one of the SAIs. Only 2200 applicants were granted admission, based on the capacity of all SAIs.¹²

Myanmar's 15 SAIs are dispersed throughout the different regions, provinces and agro-ecological zones of its territory. They are the leading institutes providing agricultural technical vocational education and training (ATVET) through a three-year diploma course.

Myanmar is experiencing a growing demand and interest for agricultural education and training.

⁹ ADS, 2018

¹⁰ NESAC, 2016

¹¹ OECD, 2014 and 2016

¹² Information obtained from DOA- SAI Division.

The curricula for all SAIs have been uniform, regardless of their location, agro-ecology and regional socio-economic context.¹³

The objectives of the SAIs are as follows.

- To educate and train competent professional, agricultural technicians and skilful workers required for the emerging agri-businesses and related industries of the Union of Myanmar.
- To cultivate agricultural technicians and skilful workers who are capable of using and disseminating the use of modern agricultural technology among farmers for the development of agriculture, livestock, fisheries and aquaculture.
- To extend high quality technical and vocational education in conformity with the politics of the Union of Myanmar.

A survey conducted among SAI graduates by MDF Training and Consultancy (MDF) Myanmar in 2018, as part of the Nuffic Niche MMR277 project, revealed that approximately 40% of SAI graduates are employed by a public government institution (primarily MOALI and DOA). Roughly a third of SAI graduates find employment in the private sector.

Figure 1: Employment status SAI graduates (MDF 2018)

¹³ With the support from NUFFIC funded projects- MOALI is developing new SAI curricula, tailored to each region.

The current three-year diploma trajectory produces graduates with general knowledge in agricultural production. According to interviews held with key stakeholders at different levels, the curricula should reflect the regional trends and labour requirements. The didactical approaches should move beyond the basic cognitive levels of remembering, understanding and applying basic knowledge and skills, towards higher levels that include analysis, evaluating and creative skills and competences.¹⁴ Theory-driven and classroom-oriented education needs to transform towards competency-based, and industry- or business-oriented, educational profiles.¹⁵

SAIs educational trajectories require diversified educational profiles that have the potential to support regional agribusiness and agricultural development in primary, secondary and tertiary sectors.

To attain its development potential through modernization of the agricultural sector, Myanmar will need to fulfil several requirements in the short, medium and long term. There is a growing and evolving demand for large numbers of SAI graduates who have tailored knowledge, skills and competences that go beyond the production sphere and who have the potential and ability to drive regional agribusiness and agricultural development in the primary, secondary and tertiary sectors.

On average, each SAI has the capacity to host 400 to 500 students. That entails that at a national level there are approximately 6000 to 7500 SAI students. The 3-year diploma curriculum prepares SAI graduates with technical competences for field level jobs, but it is not sufficient to generate the large numbers of high quality mid and high-level agri-technicians that the labour market will be needing.

On a yearly basis, 10% (approximately 30 students) of the best performing SAI graduates get the opportunity to continue their studies at Yezin Agricultural University. For the remaining large number of SAI graduates there are limited or no real opportunities to continue their studies and follow specialized courses. In order to meet the labour market demand from the agro-industry, Myanmar will need to boost its capacity and expand the SAI system in order to cater for a larger number of SAI students and to offer SAI students more opportunity for further studies and advanced education.

¹⁴ Based on Blooms' taxonomy of educational objectives (see www.bloomstaxonomy.net)

¹⁵ UNESCO, 2015

ATVET systems development – a conceptual model

The following chapters of this White Paper provide an overview, an analysis and key recommendations regarding the future of Myanmar’s ATVET system.

The analysis is structured around four key ATVET system components. These components have been adopted from a conceptual framework used internationally to promote the development of the agricultural sector through technical and vocational education.¹⁶ The conceptual framework has been tailored to the situational context of Myanmar’s ATVET system.

The four key ATVET system components considered within this model are:

- governance structure
- resource mobilization
- labour market oriented qualification and curricula
- quality assurance

¹⁶ www.nepad.org/project/tvet-systems-development

Each system component is intimately related to the others. The envisioned impacts can only be obtained when addressing these priorities through an integrated systems approach. The following subchapters will dissect and elaborate on each of the four system components.

As an illustration and reference of how the individual system components can be integrated into the design of an ATVET system, an example is provided, in the form of a case study conducted by the Korean World Bank Partnership Facility in China.¹⁷

Box 1: The ATVET education system in China

National and regional economic policy guides the formulation of education policy and investments. In that sense, agricultural education is organized around strategic development priorities at a national and regional level and human resource development priorities voiced by the industry.

Employment profiles and educational pathways are strategically embedded within regional economic development priorities and aligned with a labour market needs assessment of the primary, secondary (manufacturing) and tertiary (service) sectors. The respective agricultural educational profiles are offered at three levels of technical and vocational education: secondary ATVET, higher TVET colleges, and adult TVET (farmers and farm labourers). The education-to-work transition of graduate students is supported by means of integrated career counselling and planning programmes that are highly driven by relations and connections maintained with the private sector and industry stakeholders.

China's agricultural TVET institutes maintain close relationships with private sector stakeholders and regional authorities and are connected to regional economic development processes. Collaboration

with private sector actors primarily revolves around short term training for industry and company employees and technical research support. ATVET institutes collaborate closely with regional authorities through coordinating support for key agricultural activities (harvest, storage, vaccination and pest monitoring campaigns), supporting farmer training and community services, and support in the distribution of farm inputs.

By providing regulatory educational services and providing additional services and support China's ATVET institutes have a variety of sources of financial income that are used to upgrade and maintain the quality of its educational services and products. Contributions to the operational budgets come from national and regional governments, industry stakeholders and income generated through the provision of goods and services.

Performance of ATVET education is assessed by means of monitoring of the employment rates of graduates, employer satisfaction levels, contribution to regional economic development and collaboration with regional stakeholders.

Source: KWBPF, 2016

¹⁷ KWBPF, 2016

1 Governance structure

Governance refers to the way things are organised ('governed') in a society, including the political processes that exist in and between informal and formal institutions. Agricultural education, like any other policy domain, is governed in Myanmar in a particular way, both at national level and at local levels.

Since 1994, Myanmar's state agricultural institutes (SAIs) have fallen under the responsibility and mandate of the Ministry of Agriculture, Livestock and Irrigation (MOALI).¹⁸ The Ministry's Department of Agriculture (DOA) is in charge of the agricultural technological and vocational education and training (ATVET) system of Myanmar, which operates 15 SAIs through the DOA-SAI Division.

While the SAIs are operated under MOALI, at a national level TVET curricula are approved by the Ministry of Education (MOE), through the National Education Policy Committee (NEPC).

1.1 ATVET law

A new TVET law has been in development for a number of years, and aims at establishing the legal framework and strategic aspirations for TVET for all sectors. Key aspects of the draft law are:

- promoting the involvement of the private sector in skills development
- developing the TVET system in accordance with international standards
- a multi-stakeholder approach to developing the TVET sector, including the involvement of all related ministries.

The TVET law will consider and describe the mandate and functioning of an overarching central body or legal entity that oversees, regulates and manages the entire scope of formal and non-formal TVET.

For ATVET to function well within the agricultural sector, it is essential that coordination mechanisms are in place. Information and ideas need to flow easily and swiftly from top to bottom, and from bottom upwards. So far, coordination and exchange with other stakeholders in agriculture, such as the Ministries, companies, sectoral networks

governance
structure

ATVET law

Stakeholder collaboration and
partnerships

National and regional
ATVET committees

Recommendations

SAIs should be upgraded to a Department of Agricultural TVET within MOALI's organizational structure. This would strengthen their position in the agricultural sector as well as in the educational system.

¹⁸ In other sectors of the economy TVET is overseen by the Ministry of Education

and NGOs has been limited. To improve this, an institutional body to regulate and manage the entire scope of formal and non-formal ATVET is required both at a national and at a regional level.

Currently the SAI management and administration is a subdivision of the Department of Agriculture, under the mandate of MOALI. SAIs should be upgraded to a Department of Agricultural TVET within MOALI's organizational structure. This would strengthen their position in the agricultural sector as well as in the educational system.¹⁹

1.2 Stakeholder collaboration and partnerships

For both national and regional level committees, representation of all relevant stakeholders needs to be considered. This implies balanced representation from different sectors of society, such as government, schools/researchers, private companies, NGOs, and farmers. To illustrate this, the 'Myanmar Sapphire' is shown below including the different sectors as well as their collaborative space. It is important to note that stakeholders do not need to agree on all things in order to work together. Instead, each stakeholder contributes their strengths to a common agenda, and benefit from each other's skills and networks. Structures and mechanisms should be developed to enhance multi-level stakeholder collaboration and increase public-private-partnerships based on the 'Myanmar Sapphire'.

Figure 2: Multi-stakeholder collaborative approach

Structures and mechanisms should be developed to enhance multi-level stakeholder collaboration and increase public-private-partnerships based on the 'Myanmar Sapphire'.

¹⁹ A wide variety of stakeholders speak strongly of the need for such an upgrade (see workshop report Dec 2019).

If the SAIs are to take on a more active role as regional change agents and catalysts of rural agricultural development they will require additional resources to set up and host multi-stakeholder events. These resources should be generated regionally, collected from contributions and fees, and obtained directly through MOALI.

Stakeholder collaboration is a fundamentally important topic for the future of Myanmar's ATVET system and the development of the agricultural sector. As such the topic will be highlighted in different parts of this document.

1.3 Governance – national and regional ATVET committees

National and regional collaboration between SAIs, the public and private sector and civil society has been fairly limited,²⁰ but should be a top priority for SAI development. The Myanmar TVET system is currently undergoing a process of decentralization, with an emphasis on public-private partnerships and the involvement of the private sector in the development of the TVET sector. This opens opportunities for a stronger connection between the SAIs and the labour market, but also for companies to access innovation and technology through the TVET system. Examples of the potential benefits are described in the box.

²⁰ ADS, 2018; OECD, 2014; OECD, 2016; MSDP, 2018 and NESP, 2016

The recently established multi-stakeholder ATVET advisory boards at national and regional level should be strengthened in order to enhance active coordination and engagement with relevant public and private stakeholders, facilitating the exchange of information and advice on all aspects of the ATVET sector and rural economic development. This should include priorities, skills demand and the generation of TVET programmes aligned to the demand and needs of the agricultural sector and emerging employment opportunities.

Multi-stakeholder ATVET advisory boards at national and regional level should be strengthened in order to enhance active coordination and engagement with relevant public and private stakeholders.

SAIs should align and coordinate strategies on agricultural development through the different tiers of agricultural development committees that have been set up to implement Myanmar's agricultural development strategy. These committees have been set up at district, regional/state and union levels. They strategically enhance stakeholder collaboration and provide clear incentive packages for entrepreneurs and investors that create rural employment and dynamize rural economies.

Box 2: How regionalized linkages can benefit SAIs and their stakeholders (9 examples)

- Agribusiness companies can produce, promote and disseminate their products in SAI farms as a public-private partnership (PPP) program.
- Agrochemical companies can promote their products to students by doing trials in SAI farms.
- Seed companies can collaborate with SAI and DOA on research and development
- ATVET committee members (government staff, farmers, companies, NGOs) can contribute to SAI by giving training, consulting, and assessing the students' abilities.
- ATVET committee members can provide feedback to SAIs on labour market requirements and trends.
- Farm machinery companies can let students practice with their machines.
- Regional authorities and SAI coordinate with stakeholders in support regional agro-economic development.
- Local innovations and initiatives for inclusive and climate smart value chain development can be supported, trialled and field validated with the support of SAI students.
- Farmers and companies can easily recruit skilled students by participating in internship programs.

2 Funding and resource mobilization

Structural productive and economic transformations of rural areas are prone to stagnate in the face of skill shortages. Therefore, any effort to stimulate rural development should be underpinned by adequate funding for human resource development.

Myanmar's ambitions regarding agricultural and rural development require investments and resource mobilization strategies that rely on increased public expenditure, private sector investments in agriculture and the broader food system, and support for smallholder farmers to better link to agricultural value chains and markets.²¹

2.1 Public budget allocation

TVET institutions receive budgets from the Ministry to which they correspond. In the case of the SAIs, this is MOALI. The size of the budget allocation is determined by the Ministry of National Planning and Finance.

Myanmar's expenditure on education was 8% of total government expenditure in the fiscal year 2016-17. Post-secondary non-tertiary vocational education only received 0.12% of total government expenditure. Within MOALI the combined budget for agricultural research, extension, education, planning, land records and statistics does not surpass 5% of the capital budget.²² Targeted investments in agricultural education, research and development should be put in place in order to allow continuing support to the structural economic transformation that is already taking place in Myanmar. Numerous reviews highlight a very positive return on these type of investments in human resource development.²³

At present the SAI division exclusively relies on what is budgeted for by MOALI and disbursed by the DOA. Individual SAIs have no say in the amount of resources allocated to them, and budget allocation is mainly based on human resource planning. The budgets are not specific about unit costs and activities or the infrastructural needs of each individual SAI. This means that budget expenditures mainly cover staff

Public budget allocation

Contributions from private sector and regional governments

Donor alignment and harmonization

Recommendations

Budget allocations for SAIs should specify human resource and infrastructural needs for each individual SAI, linked to regional development priorities. This should include labs, ICT classroom teaching equipment, school-farm facilities, quality assurance, and HRD.

²¹ ILO, 2015

²² ADS, 2018

²³ Bhatia and Hafez, 2019; ILO, 2014, 2015 and 2020

salaries, and that expenditure on facilities, equipment, quality assurance and teaching materials is constrained.

In order to improve the quality of education, address the high drop-out rate, and expand the ATVET system to the demands of future employers, the budget for these purposes should be increased.²⁴ In addition, budget allocations for SAIs should specify human resource and infrastructural needs for each individual SAI, linked to regional development priorities. This should include labs, ICT classroom teaching equipment, school-farm facilities, quality assurance, and HRD.

The limited funding of SAIs has repercussions at a number of levels. High number of students per class and deteriorated SAI infrastructure affect the quality of the services provided, as well as staff motivation.

In the current situation, SAIs are not in the position to take full advantage of the resources available for vocational education, unlike the TVET institutions under the MOE. However, there should be strategic investments in additional ATVET schools, infrastructure and educational staff. In order to do this, the current SAI division should be granted the status of Department of ATVET in MOALI's organizational structure.

2.2 Contributions from private sector and regional governments

Development of Myanmar's agriculture and rural economy requires increased levels of technical and financial coordination and increased cooperation between relevant stakeholders at regional and local levels.

Successful international experiences highlight the need to encourage and promote private sector investment in agricultural education, research and development ²⁵, including regional investments in the rural agri-food sector related storage, processing, manufacturing etc. The government should consider how contributions from the private sector and regional governments could be used for this purpose.

To support regional embedding and stakeholder collaboration, SAIs should be encouraged to engage in local and regional activities that diversify their source of income and support regional development processes. SAIs have the potential to position themselves as one of

Strategic investments in additional ATVET schools, infrastructure and educational staff should be considered.

Partnerships between SAI and sectoral or regional stakeholders should be based on mutual benefits and concrete incentives that offer win-win scenarios for all involved.

²⁴ ILO 2014, p. 52

²⁵ Bhatia and Hafez, 2019; KWPF, 2016

Besides budget, it is important for SAIs to be involved in the policy dialogue with development partners and relevant Ministries. The regional and national ATVET Committees would be an appropriate model for this common platform. Again, such committees should be composed of representatives of different stakeholder groups in the Myanmar Sapphire (government, education/research, the private sector, and NGOs/farmers), with the regional government facilitating the collaboration of stakeholders with the SAIs.

It is important to reiterate that SAIs should align and coordinate strategies on agricultural development and agricultural research through the different tiers of agricultural development committees that have been set up at regional/ state and district levels.

Motivating private sector stakeholders to establish partnerships with SAIs and the above-mentioned agricultural development committees will require tailored incentive packages for agri-entrepreneurs who invest in rural development and create rural jobs.

2.3 Donor alignment and harmonization

A variety of donors are making valuable contributions through MOALI to agricultural development and Myanmar's ATVET system. Current support is offered by, amongst others, the Embassy of the Netherlands, the Embassy of New Zealand, the German Corporation for International Cooperation (GIZ), the Korea International Cooperation Agency (KOICA), the Japan International Cooperation Agency (JICA), the Livelihoods and Food Security Fund (LIFT), Nuffic, and the World Bank. LIFT, a multi-donor facility managed by the United Nations Office for Project Services (UNOPS) has special relevance given that they have a large number of programs related to agriculture with opportunities for linkages to ATVET. The Food and Agriculture Organisation of the United Nations (FAO) has done incidental work to develop a climate smart agriculture curriculum for SAIs and for YAU, but is not involved in a comprehensive ATVET reform discussion. The International Labour Organisation (ILO) is also relevant, given their expertise and interest in occupational health and safety standards.

In order to obtain and communicate effective inputs for policy dialogue, it is important that the ATVET department should have an external and internal relations unit to participate in relevant meetings with development partners and ministries. Donors should make sure to align their efforts and resources towards ongoing policies, strategies and developments that should be centrally kept track of in order to distribute them equitably over key priority investment areas.

Whenever possible, MOALI should consider coordinating potential donor investments in agricultural and rural development with DOA and SAI management, by structurally including ATVET development in investment priorities.

Box 3: Examples of funding and resource mobilization for ATVET and agricultural development

There are ample international references of good practices in collaborative resource mobilization for agricultural development and agricultural education. Effective strategies have relied on collaborative investments in which both public and private stakeholders aligned their ambitions through sectoral regional development plans. This has led to investments including the following: agricultural research, training in good agricultural practices, the development of agri-food based entrepreneurship, and promoting the diversification of the rural non-farm economy. This has had good results including increased productivity in rural infrastructure and increased employment throughout the entire sector (ILO 2020; Bhatia and Hafez 2019; ILO 2015, KWBPF 2016).

Great success was obtained in the Philippines and Indonesia by aligning stakeholder contributions in cash and in kind to the defined development agenda, and by developing a multi-stakeholder sectoral approach to agricultural research and

education, agricultural development and rural entrepreneurship (ILO 2015).

Agricultural TVET institutes in China have engaged in a series of activities to mobilize resources and position themselves as valuable regional partners for Agricultural Development. They offer tailored training and capacity building to staff of private companies on technical and regulatory issues related to food safety, food quality assurance and certification and application of Good Agricultural Practices. Additionally, Chinese Agricultural TVET institutes offer short trainings to small scale input suppliers and farmer organizations on Good Agricultural Practices and application of agricultural inputs.

Lastly, there are a variety of successful experiences of agricultural TVET institutes involved in seed production and multiplication for public and private entities as well as monitoring and certification of seed production activities.

3 ATVET quality assurance

Effective quality assurance should be set up so that SAIs offer the best possible educational service for their students. This will ensure the implementation of high quality learning through curricula and learning methodologies that are aligned to the demands of the labour market and regional development priorities.

Quality assurance should go beyond evaluations based on graduation percentages. It should focus on key performance indicators that look at the quality of the education offered in terms of content, approach, competences and skills. Additionally, quality assurance should also consider the quality of SAI management and the quality of the educational infrastructure.

The following subchapters will go into four key facets of ATVET quality assurance: educational quality; educational staff performance/human resource development; non-teaching staff quality assurance and recruitment; and, finally, infrastructure quality.

3.1 Educational quality

Mechanisms should be set up for continuous monitoring and evaluation of SAI performance, educational quality, teacher performance, student satisfaction and educational performance. This would enable policy makers and SAI management to make informed decisions as well as promoting the wellbeing of the students and the quality of education offered.

Currently, a variety of public institutions are mandated with the regulation, quality assurance and accreditation of agricultural education and TVET education.²⁶ The system of various TVET accreditations and a national qualifications framework (NQF) are only in the early stages of development. In order to make quality assurance effective and efficient, clearly defined roles and responsibilities should be set out and institutional collaboration should be established between entities at different levels. Having signed and ratified the ASEAN Qualifications Reference Framework (AQRF), Myanmar should ascertain that the NQF aligns with the ASEAN principles for quality assurance in education. Alignment of the NQF to the AQRF will allow SAI qualifications to be

Educational quality

Educational staff performance and HRD

Non-teaching staff performance and recruitment

Infrastructure quality

Recommendations

Mechanisms should be set up for continuous monitoring and evaluation of SAI performance, educational quality, teacher performance, student satisfaction and educational performance.

²⁶ NSSA; NEPC; Agricultural Sectoral Committee, MoE-TVET department, MOALI, SOA-SAI division.

benchmarked to ASEAN and international standards, creating additional relevancy for private sector stakeholders.

The quality assurance mechanisms and structures that are currently in place are predominantly aggregated at a national level and regional structures are largely absent. Agribusiness stakeholders and civil society are currently not involved in SAI quality assurance. There should be explicit concertation with the TVET department of the Ministry of Education so that ATVET integrates learnings and best practices from TVET developments within other sectors. Attention should be given to align and integrate SAI quality assurance efforts to the quality assurance mechanisms that are in place within the educational sector.

Myanmar's ATVET system should have a multi-level quality assurance system. Increasing the responsibility of regulatory and advisory bodies at a regional level, and actively involving regional stakeholders, the public sector and agro-industries, would enhance the ability of SAIs to align with labour market demands and trends, and enable quality assessments by independent future employers. SAI staff, SAI teachers and SAI students should be actively involved in periodic assessments of SAI performance.

Private sector and agribusiness stakeholders should be involved in the assessment of the competences, knowledge and skills of SAI graduates. This will allow for more clarity regarding the positioning of SAI graduates in the labour market.

In future, adequate budgetary support to implement these measures should be assigned to each SAI. MOALI and MoE should both contribute financially and methodologically in setting up this system. Once up and running, the system should be operated by each SAI and aggregated at a federal level.

Quality assurance should be conducted in a similar manner in all SAIs. Incentives should be provided to reward improvements and high quality performance achievements.

Currently, educational quality is affected by large class sizes and high student teacher ratios. Student-centred ATVET approaches are most effective in settings of 30 to 35 students per teachers, and budgeting and SAI structures should be set up to ensure this. In order to cater for the growing demand for ATVET graduates and the growing number

A Qualifications and Accreditations Framework and quality assurance system for ATVET should facilitate stakeholder collaboration and set out clearly defined roles and responsibilities for all parties involved.

Student-centred ATVET approaches are most effective in settings of 30 to 35 students per teachers, and budgeting and SAI structures should be set up to ensure this.

of ATVET applicants, the capacities of SAIs need to grow. To guarantee educational quality there should be investment in SAIs through expansion of the existing carrying capacity, including additional SAI locations.

Educational curricula should be periodically revised and updated in order to stay attuned to changing job requirements and market opportunities that tend to evolve rapidly within the agricultural sector.²⁷

Effective monitoring and evaluation, and a national and regional process that periodically requires stakeholders to review the educational curricula, should be used to keep up the standard of educational quality.

The application process for SAI students should be strengthened by allowing SAIs to guide admissions procedures based on inhouse examinations.

The current ATVET system should expand and grow in order to cater for growing demand whilst guaranteeing quality education.

Involving stakeholders in monitoring, evaluation and periodic review of educational curricula design and implementation enhances educational quality and its relevance for the agricultural sector.

Box 4: Mechanisms and strategies to enhance quality assurance of SAI in Myanmar

- NSSA should support SAIs to become accredited assessment centres, allowing them to assess SAI students and other experienced workers in the agro-industry. Additionally, SAIs should engage external experts from agro-industry and employment agencies as accredited assessors, allowing them to conduct external assessments to evaluate students' final qualifications.
- Collaboration between NSSA, individual SAIs and regional stakeholders should be strengthened in developing context-specific competency standards and competency-based curricula and conducting skill-based assessments.
- High-level forums or workshops should be developed to enable governments, regional authorities, employers, unions, and TVET institutions to agree on occupational categories used in national courses and qualifications, and the levels of qualifications that will be provided within each occupational category.

Source of information: stakeholder consultation workshop 'Building the future of ATVET in Myanmar', Nay Pyi Daw December 2019.

²⁷ This topic is further addressed in the section on labour market-oriented qualification and curricula.

3.2 Educational staff: performance and human resource development (HRD)

SAIs employ knowledgeable and experienced teachers who work together and collaborate with newly assigned teachers.²⁸ Most of the educational staff have a BSc or MSc degree in an agronomic discipline. SAI teachers have the option to follow refresher courses offered by the Central Agricultural Research & Training Centre (CARTC) that focus on technical subjects. Only a limited number of the educational staff have direct experience of working in agribusiness or in the agri-food sector. Currently SAIs do not offer pre-service or in-service training, or capacity building mechanisms for educational staff.

Only limited numbers of SAI teaching staff have had pedagogical training or education.²⁹ No courses are being offered to enhance pedagogical and didactical competences and skills. Their capacity and skills need to be built up so that they have expertise and insight in academic topics, and use modern pedagogy to guide students through an interactive learning process. There is therefore a need to develop teacher competences and capacity related to modern teaching and interactive training methodologies inspired by student-centred, competence-based experiential learning.

SAIs should prepare students for future jobs by integrating strong competence-based, practical components into curricula, developing teachers' didactic and pedagogical competences and skills, and supporting the use of interactive and student-centred methodologies.

²⁸ Although there are slight differences among the various SAIs, on average each institute employs some 20 teachers, 8 – 10 administrative staff, and 50 support staff.

²⁹ Until 1988 agricultural teachers received pedagogical and didactical training and education.

One fundamental component of this educational transformation should be to develop meaningful and competence-based practicals (at present practical sessions only consist of basic manual labour in the field). In future these sessions should enable students to connect theory to real-life practice and prepare for their future jobs; for instance, practising and learning about farm management and entrepreneurship.

In order to make current curricular innovations effective, teachers' didactic and pedagogical skills and competences need to be strengthened. With the support of the Nuffic Orange Knowledge Programme, an agricultural teacher training unit will be set up by MOALI in coordination with YAU. This facility will build up the skills and competences of new teaching talent and existing educational and management staff. Training will include classroom learning and practical teaching experience through on-the-job training. This should improve educators' topical and technical knowledge and skills and should make them familiar with the required pedagogical methods and didactical techniques required to teach the new curriculum. Additionally, international experience has demonstrated that periodic teacher assessment and reward incentives can have positive effects on teacher motivation and performance (ILO, 2014). Assessment protocols should therefore be set up for each SAI to monitor individual teacher performance.

Under the current situation, the work conditions, salaries and career development opportunities of SAI teachers is not conducive to quality education. Incentives should be established to reward educational staff for their performance and the quality of the education they impart. Educational staff should have in-service training and clear career development trajectories to develop from assistant teacher to senior lecturer.

The following box describes four approaches that have shown to be effective in engaging students in an interactive learning process. All approaches explicitly focus on engaging both student and teacher.

Educational staff should have in-service training and clear career development trajectories to develop from assistant teacher to senior lecturer, and incentives to reward performance and the quality of the education they impart.

Box 5: Interactive and student-centred learning approaches

1 POGIL approach (*process-oriented guided inquiry lessons*)

Teachers assign a text to review and pose a set of questions to provoke students to look more deeply at and develop conclusions about the text. Then teachers make supplemental questions that move the students towards thinking deeply and drawing more complex conclusions.

2 Project-based learning

This approach focuses primarily on having students explore problems and challenges. Through this they develop their content knowledge and ability to solve problems. The student engages in a project and learns subjects as they complete their project. The teachers look for ways to connect subjects to the project. In turn, the student looks to teachers for content knowledge, so they can complete their project.

3 Reality pedagogy

This is an approach to teaching and learning that starts with student realities and then uses their information as the starting point for instruction. In reality pedagogy, teachers believe that for teaching and learning to happen, there has to be an exchange of expertise between students and teachers. For this exchange to happen, teachers need a set of tools called the '5 C's' to gain insight into student realities.

- **co-generative dialogue:** teachers and students discuss the class and both suggest ways to improve it.
- **co-teaching:** students get opportunities to learn content and then teach class.
- **cosmopolitanism:** students have a role in how the class operates and what is taught.
- **context:** the school neighbourhood and community are seen as part of the classroom.
- **content:** teachers acknowledge the limitation of their content knowledge and work to build their content expertise with students

4 Flipped classroom

A popular approach that changes the process of a typical classroom lecture. In this approach, students watch lectures on video; in the classroom they then ask questions based on what they have watched. Students work in groups to discuss and have their questions answered by the teacher. In this process, students are stimulated to learn from both the video lecture and the interactive classroom. They are able to create, collaborate and study at their own pace.

3.3 Non-teaching staff quality assurance and recruitment

Non-teaching specialist support staff such as finance or library staff should be recruited for particular skills and competences that are not necessarily specific to TVET such as ICT operation, maintenance and sustainability. Given current trends for improvement of educational quality, it should be expected that support staff will become more important in delivering competence-based curricula. SAIs should upgrade and expand the competence of support staff in charge of finance administration, resource mobilization and management of the institutes, including staff involved in implementing the quality assurance system and tracer studies.³⁰

For management staff, there are challenges to ensure that the right human resources are available for SAIs. In some cases managerial staffs are recruited for their demonstrated level of managerial skills (a managerial approach). In others, teachers are promoted from teaching positions to take on managerial responsibilities (a collegial approach). However, this can lead to problems. Teachers may not have management skills; managers may not have knowledge of the sector they are appointed to manage. Ideally, managers should have professional career trajectories that reflect both skill-based and knowledge-based competencies. The development of (regional) competency standards and competence-based assessment should address this.

3.4 Infrastructure quality

SAIs require adequate, modern facilities in order to deliver quality education. These facilities include classrooms, teaching equipment, school farms, modern (ICT driven) machines and equipment, ICT, laboratories, and dormitories. Budgetary allocation for infrastructure, upkeep, and maintenance should be based on independent assessments based on criteria that are equally upheld for all SAIs.

There are numerous examples where private companies have supported MOALI through investments in ATVET infrastructure. China has positive experiences of collaboration, and research conducted in collaboration, between seed companies and ATVET institutes. Private sector investments are most effective when aligned to national strategies and accompanied with public sector investments through public private partnership arrangements.

³⁰ Tracer studies are instrumental in tracking and evaluating the effectiveness of technical vocational education and training (TVET) in equipping graduates with the necessary skills to successfully gain employment.

4 Labour market-oriented qualifications and curricula

4.1 Labour market-oriented curriculum

At present the three year AVET system needs to be restructured in order to offer the type of education and training required to endow students with the professional skills most urgently needed in the labour market. Industry employers require SAI graduates with specific workplace skills and competences. But SAI curricula are currently not labour market-driven, which results in a mismatch with the technical and vocational skills that the labour market demands.³¹ Strong partnerships and coordination of SAIs with private sector stakeholders and regional authorities should therefore be established.

Up to now, the course curricula at the SAI have been of a quite generalist and generic nature, in compliance with the nationally predefined standardized norm. This has limited the contextualization of curricula, so that they do not at present address and harmonise with regional trends and concrete demands by the labour market. Skills assessment of SAI graduates is fairly limited. SAI curricula have also had a strong focus on production activities and key priority sectors; but this orientation does not always match with the skills and competences that the private sector is looking for in future employees. As a result, there is a mismatch between the skills and competences of SAI graduates and the needs of the private sector.³² The recent Niche MMR 227 project has been instrumental in developing competence-based curricula and regional diversification by developing new modules with problem-based methodologies. This process of tailoring SAI curricula to regional priorities should be continued and sustained. SAIs should also introduce flexibility and diversity in their educational trajectories in order to cater to diverse target groups.

International experiences with regional and sectoral approaches to agribusiness development have successfully been able to support economic transitions to move beyond the primary sector and production-supported agrarian economies.³³ The promotion of non-farm economies and the development of manufacturing and services

labour market
oriented
qualification
and curricula

Labour market-oriented
curriculum

On-the-job training and skills
development

Labour market information
system and career counselling

Recommendations

The process of tailoring SAI curricula to regional priorities should be continued and sustained. SAIs should also introduce flexibility and diversity in their educational trajectories in order to cater to diverse target groups.

³¹ NESP, 2016; ADS, 2018 ; MSDP, 2018

³² ADS, 2018; WB, 2018; OECD, 2016

³³ ILO, 2015

sectors have the potential to spur rural economic transformation and diversify employment opportunities within the agri-food system.³⁴

There is ample evidence from other countries transitioning from a predominant agrarian economy to a more diversified and balanced economy, that agricultural productivity increases often correlate with declining on-farm employment and increased unemployment rates in rural and semi-rural areas.³⁵ The general trend in these cases is that stakeholders gradually start to require less skilled labour in production, but increasingly look for qualified employees with diversified technical, entrepreneurial and social skillsets that can be applied in the field.³⁶ Myanmar's ATVET system should support, facilitate and periodically re-align with the evolving demand of the labour market, by anticipating and planning regional and rural development trajectories and attuning its educational learning trajectories to the requirements and demands of the labour market.³⁷ Labour market-oriented TVET programs should design skill development programs attuned to the evolving demands of diversifying rural economies.³⁸ A variety of mechanisms and structures should be set in place to encourage agro-industry stakeholders, NGOs and INGOs to actively participate in curriculum development, review and assessment, to ensure that focus and quality meets the industry demand.³⁹

Labour market-oriented ATVET programs should support HRD beyond the production domain, promoting a combination of diversified, technical, entrepreneurial and social skillsets strongly aligned to the evolving demands of rural economies.

³⁴ IFAD, 2019; ILO, 2015 and 2020

³⁵ ILO, 2020

³⁶ *ibid.*

³⁷ IFAD, 2019; ILO, 2014 and 2015

³⁸ ILO, 2020

³⁹ Input from participants' stakeholder workshop, Dec 2019.

Looking beyond production, SAIs have the potential to support regional development by promoting rural entrepreneurship and by supporting human resource development to further strengthen the manufacturing and services sectors. Such a structural transformation calls for stronger emphasis on combining technical and business skills.⁴⁰ By focusing and combining efforts to develop regionally prioritized value chains, policymakers, regional authorities and SAIs should design interventions and approaches to address the needs of the agricultural sector and enhance the linkages between input markets, production, post-harvest management, processing and value addition, transport and distribution, and sales. As highlighted by the Asian Development Bank (2015) and the World Bank (2018), development of the agricultural sector should ensure that economic activities are encouraged and supported through investments along the entire supply chain.⁴¹ This should be in the upstream (research and development, certified seeds, high-value varieties, farming systems), midstream (processing, storage and value addition), and downstream (packing, food safety, traceability, branding and market development).⁴² This needs coordination, integration and concertation between ministries and between the national union and respective regions and states.⁴³

Within the agricultural domain, Myanmar's constantly developing labour market is increasingly looking for specific and specialized competences and skillsets. Nevertheless, at the moment the agricultural education system offers few opportunities for SAI graduates to continue their studies to deepen and strengthen their practical knowledge and applied skills. The National Skills Standards Authority (NSSA) has limited numbers of profiles for AVET. This should be changed so that in the medium term occupational profiles progressively diversify and include additional trajectories directly related to specific job profiles and occupational competences such as irrigation technician, seed technician, integrated crop manager, paddy-fish farming assistant, industrial crops technician, ICT and marketing consultant, and farm finance administrator.

Mechanisms and structures should be designed and implemented for SAI graduates, agri-entrepreneurs and rural youth, that enable them to continue to develop their knowledge throughout their professional

Occupational profiles should progressively diversify and include additional trajectories directly related to specific job profiles and occupational competences.

SAIs should diversify the services they offer to include, for instance, modular, short-term, practice-oriented courses, work-based learning, distance learning, online learning/e-learning/blended learning, evening classes, and weekend classes.

⁴⁰ Kirui & Kozicka, 2018 and World Bank, 2018

⁴¹ ADB, 2015; World Bank, 2018

⁴² ADB, 2015

⁴³ *ibid.*

careers. Differential modalities and life-long learning opportunities should be offered so that a wide variety of stakeholders will have access to education and training. Depending on the specific objective and target group, SAIs should diversify the services they offer to include, for instance, modular, short-term, practice-oriented courses, work-based learning, distance learning, online learning/e-learning/ blended learning, evening classes, and weekend classes. All ATVET educational trajectories should be aligned to the ASEAN Qualification Reference Framework (AQRF).

To build up Myanmar's pool of skilled and competent mid-level agricultural technicians and graduates, MOALI should improve the educational linkages and transition trajectories between technical and vocational education (AQRF level 4) and University level agricultural education and training (AQRF Bachelor level 6 and AQRF Master level 7). Structures and modalities should be developed in order to offer technical bachelor level education and training at select locations throughout the country. SAI graduates should be able to continue developing their knowledge base and skillset strengthen their added-value and employability at the field level.

MOALI should offer technical bachelor level agricultural education and training for mid-level agricultural technicians and graduates.

4.2 On-the-job training and skills development

The theoretical knowledge obtained through formal education needs to be accompanied by insightful, practical know-how and hands-on training. Aside from engaging with simple field activities (such as field preparation, planting, transplanting, watering, pruning, harvesting) SAI students would benefit from getting trained in practical skills such as farm management, entrepreneurship, financial management and client orientation. Additionally, SAI students would benefit from training focussed on the use and operation of modern agricultural machines and equipment.

These topics should be introduced within the curricula, which should be designed to include a series of practice-oriented modules and assignments. At the same time, collaboration with public and private sector stakeholders is vital.

Internship opportunities for students to gain work experience and to understand what the labour market requires of them have strong mutual benefits for students and private agri-food companies. Internship placements need to be carefully monitored and coached and need to have clear learning objectives that go beyond the repetitive performance of specific labour activities to include some deeper learning and skills development. Through collaboration with agro-industry stakeholders, SAI students should engage in work-based learning and school-based learning through the effective application of dual education system and apprenticeship programs. Agribusiness and agricultural companies should support internship programs and act as external supervisors.

Collaborative research activities conducted together with the Department of Agricultural Research (DAR) and the DOA form an excellent basis for practical on-the-job training and skill development of SAI students. There are a variety of experiences that illustrate the usefulness of involving ATVET institutes in agricultural research and development. A number of collaborations between SAI and private companies, or research entities, are already ongoing in a few areas (see box 6). Similar initiatives should be promoted in all SAIs.

By including topics related to entrepreneurship in the SAI curricula, students become engaged in practical training and skills development related to financial literacy, bookkeeping, business plan development, and entrepreneurship. By packaging practical assignments with effec-

Internship programmes and on-the-job training should be developed so that a balance is created between school-based learning and work-based learning. Internship placements need to be monitored and coached actively, based on clearly defined learning objectives.

tive coaching, SAI students have the opportunity to experience the process of setting up an SME, providing them with the skills, experience and motivation to engage and support emerging rural economies.

An approach known as the cooperative vocational training approach (CVT), has proven effective in engaging stakeholders by providing clear win-win scenarios for future employers of TVET graduates and regional economic development processes.⁴⁴ Key elements of the CTV approach, as applied in Pakistan, involve different stakeholders in TVET education, considering them as key partners in the formulation of governance, standard-setting, and quality assurance of educational profiles and competence-based training processes. Stakeholders are engaged from the onset of aligning educational trajectories with specific job profiles, collaborative design and delivery of educational trajectories and joined cost sharing, monitoring and evaluation of TVET performance and quality service delivery. Cooperative vocational training trajectories are composed of a balanced mix of on-the-job training and school-based learning.⁴⁵

Box 6: Examples of effective on-the-job training

- In Malaysia, agro-entrepreneurship has been supported through a programme that involves the Ministry of Agriculture and industry stakeholders. A key element of this approach is the 'mentor-mentee' concept whereby an anchor 'agro-preneur' provides guidance to mentees in the development of their business ideas.
- In China, seed companies partner with ATVET institutes to engage students in seed production and in seed production monitoring and evaluation.
- The international seed company East West Seed have initiated a collaboration with the SAIs of Pinyinmana and Patheingyi, engaging students in field trials of various kinds of vegetables. East West Seed and YAU also work together with student internships and technology field validation trails.
- Students of the SAI in Heho are engaging in internship programmes with regionally active agribusinesses such as PRIME and Myanmar Belle.
- In coordination with the DAR and the DOA, SAI students could be involved in ongoing agricultural research by maintaining, managing, monitoring and evaluating field trails and demonstration plots with modern agricultural technologies.

⁴⁴ GIZ, 2015

⁴⁵ *ibid.*

4.3 Labour market information system

There are many opportunities to build a system to support the linkage of graduates to jobs. This would include setting up a labour market information system accompanied by tracer studies and labour market oriented qualification assessments. Currently there is a lack of information on the skill demand in the agricultural sector.⁴⁶

Strengthening the alignment and orientation of AVET curricula to regional labour market demands, regional development priorities and development trends in rural areas would enable SAI graduates to enjoy better and increased employment opportunities. An enabling policy environment and effective mechanisms should therefore be put in place to provide structural incentives for the private sector and regional development actors to coordinate and engage actively with the ATVET system.⁴⁷

In order to increase the chance for SAI graduates to find employment it is essential to define a range of professional profiles that respond to the priority needs of the labour market in the agricultural sector, specified by region. TVET curricula have been centrally developed by MOALI with the participation of other responsible ministries. As such, SAI curricula have not been fully tailored to local needs, agro-ecologies, regional priorities and rural development strategies. Systematic collection and dissemination of national and regional data on labour market skill demands, and tracer studies of SAI graduates employability, should be carried out, as this would allow policy makers and regional authorities to adapt and tailor public investment in line with evolving needs and demands.⁴⁸ By conducting coordinated tracer studies, the ATVET system and individual SAIs would be able to generate an overview of the general employability and employment prospects of SAI graduates. Tracer studies would assist in mapping out the regional demands and future trends in the labour market. MOALI should assign budgetary means for these studies to be conducted at a national and regional level over an extended period of time.

Periodic assessments of current and future labour market trends through stakeholder consultation, skills forecasting and labour market information systems should be set up, as these will allow SAIs and the overall ATVET system to review the content of curricula and make adjustments tailored to the demand of the labour market. After all,

Policy makers should map out the current regional demands for SAI graduates, and use forecast trends for future alignment. This should be done using systematic collection and analysis of national and regional data on labour market skills demand, combined with tracer studies that allow the tracking of SAI graduate employability.

⁴⁶ ILO, 2020 and World Bank, 2018

⁴⁷ World Bank, 2018

⁴⁸ *ibid.*

the current needs for labour may be quite different from the needs of companies and government organisations in three to five years' time. Even though forecasting and scenario planning studies cannot predict the future, they are helpful for preparing for the most likely scenario based on extrapolating key trends. These trends could be the speed of mechanisation, the impact of Covid-19 or other health shocks, regional market trends, or the impacts of climate change on agricultural productivity.

Myanmar's Ministry of Labour, Immigration and Population (MIP) and regional entities should play an active role in setting up an effective labour market information system that is accompanied by career counselling programs. These programs should support SAI students with advice, planning and career development counselling. SAIs should be well informed not only about the nature and scope of the skills, knowledge and competences in demand in the labour market, but also about the nature of jobs, vacancies, employment opportunities and labour conditions in the agro-food sector and related industries in the national regional economies.

SAI career counselling programs should be developed that facilitate effective school-to-work transition and coach students in planning career development trajectories.

5 Future vision for ATVET in Myanmar – priorities for action

The agricultural sector contributes to more than two-thirds of employment in some of Myanmar's rural areas, so increasing agricultural productivity and employment opportunities in the agri-food sector is a fundamental objective.⁴⁹ Education and vocational training plays a fundamental role in developing a qualified and skilled labour force to support the economic transformation process at hand.

Myanmar's agri-food sector will need to cater to evolving domestic market trends, changing consumer behaviour, and concerns regarding food safety and more diversified diets. To position itself internationally, Myanmar's agri-food sector will need to develop its export markets, improve food quality and safety regulations, and invest in value chain development and the processing of high quality food products. SAIs should develop specialized curricula and programs addressed to food processing, food safety and food quality (at AQRF level 3, 4); curricula and educational trajectories are also required for middle managers and employees (AQRF level 5/ technical bachelor).

Myanmar scores high on the Global Climate Risk Index⁵⁰ and as such needs to anticipate changing climate scenarios and build resilient rural economies that adapt, innovate and develop according to external circumstances. ATVET, together with applied agricultural research and innovation, needs to support the creation of resilient communities, climate smart agriculture and businesses capable of coping with future socio-environmental scenarios. SAI courses and training need to integrate climate smart approaches and focus on sustainable natural resource management.

At a policy level a series of sectoral policies need to be put in place, including an improved business regulatory environment to support rural entrepreneurship, and inclusive agricultural development based on effective public and private sector collaboration.⁵¹

Evidence indicates that strategic public and private investments in ATVET can develop dynamic rural sectors, improve rural livelihoods

SAIs should develop specialized curricula and programs addressed to food processing, food safety and food quality (at AQRF level 3, 4); curricula and educational trajectories are also required for middle managers and employees (AQRF level 5/technical bachelor).

SAI courses and training need to integrate climate smart approaches and focus on sustainable natural resources management.

Strategic investments in ATVET should focus on small- and medium-scale farming and value adding processes in order to promote the creation of dynamic rural economies and employment opportunities.

⁴⁹ World Bank, 2018

⁵⁰ Myanmar ranks 2nd worldwide on the Long-Term Climate Risk Index (CDR) of countries most affected from 1999-2018. <https://germanwatch.org/en/17307>

⁵¹ World Bank, 2017

and create quality employment opportunities for increasing numbers of rural youth.⁵² Compared to neighbouring Asian countries, Myanmar has low public expenditure in agricultural education, research and development and should aim to invest support human capacity development and agricultural research for development.⁵³ Although post-harvest value addition and food processing is a line of investment in the Nuffic OKP Myanmar project, increased attention and specialized facilities are needed for education on food processing and food safety. Strategic investments in ATVET, therefore, should focus on small- and medium-scale farming and value adding processes in order to promote the creation of dynamic rural economies and employment opportunities.

The box below lists some competences that key stakeholders in the agricultural sector believe are required to support agricultural development in Myanmar in years to come.

Box 7: Future knowledge, skills, and competencies for sustainable agricultural development in Myanmar

Climate smart agriculture, food safety and quality management, produce quality, planning and conducting agricultural research, post-harvest technology, marketing & trading, post-harvest value

addition, leadership, management and problem solving, seed technology, communication, environmental management, integrated pest management, good agricultural practices and guidelines, ICT.

Source of information: stakeholder consultation workshop 'Building the future of ATVET in Myanmar', Nay Pyi Daw, December 2019.

This White Paper emphasises that there are numerous interlinked and complementary requirements to strengthen Myanmar's SAIs and ATVET system. A number of recommendations for ATVET development have been coined on the basis of the research, conversations and obtained stakeholder input. The following recommendations summarise the most prominent priorities for action that have been highlighted in this document.

⁵² IFAD, 2019

⁵³ World Bank, 2018

Key recommendations – priorities for action	Page
SAIs should be upgraded to a Department of Agricultural TVET within MOALI's organizational structure. This would strengthen their position in the agricultural sector as well as in the educational system.	19
Structures and mechanisms should be developed in order to enhance multi-level stakeholder collaboration and increase public-private-partnerships based on the 'Myanmar Sapphire'.	20
Multi stakeholder ATVET advisory boards at national and regional level should be strengthened. This would enhance active coordination and engagement with relevant public and private stakeholders.	22

**governance
structure**

Key recommendations	Page
Budget allocation for SAIs should specify human resource and infrastructural needs for each individual SAI, linked to regional development priorities. This should include labs, ICT classroom teaching equipment, school-farm facilities, quality assurance and HRD.	23
Strategic investments in additional ATVET schools, infrastructure and educational staff should be considered.	24
Partnerships between SAI and sectoral or regional stakeholders should be based on mutual benefits and concrete incentives that offer win-win scenarios for all involved.	24

**resource
mobilisation**

Key recommendations	Page
Mechanisms should be set up for continuous monitoring and evaluation of SAI performance, educational quality, teacher performance, student satisfaction and educational performance.	28
A Qualifications and Accreditations Framework for ATVET should facilitate stakeholder collaboration and set out clearly defined roles and responsibilities for all parties involved.	29
Student-centred ATVET approaches are most effective in settings of 30 to 35 students per teachers, and budgeting and SAI structures should be set up to ensure this.	29
The current ATVET system should expand and grow in order to cater for growing demand whilst guaranteeing quality education.	30
NSSA should support each SAI to become Accredited Assessment Centres allowing them to assess SAI students and other experienced workers in the agro-industry. Additionally SAIs should engage external experts from the agro-industry and employment agencies as accredited assessors, allowing them to conduct external assessments to evaluate the students' qualifications before graduation.	30
SAIs should prepare students for future jobs by integrating strong competence-based, practical components into curricula, developing teachers' didactic and pedagogical competences and skills, and supporting the use of interactive and student-centred methodologies.	31
Educational staff should have in-service training and clear career development trajectories to develop from assistant teacher to senior lecturer, and incentives to reward the performance and the quality of the education they impart.	32

**quality
assurance**

Key recommendations	Page
The process of tailoring SAI curricula to regional priorities should be continued and sustained. SAIs should also introduce flexibility and diversity in their educational trajectories in order to cater to diverse target groups.	35
Labour market-oriented ATVET programs should support human resource development beyond the production domain, promoting a combination of diversified, technical, entrepreneurial and social skill-sets strongly aligned to the evolving demands of rural economies.	36
Occupational profiles should progressively diversify and include additional trajectories directly related to specific job profiles and occupational competences.	37
SAIs should diversify the services they offer to include, for instance, modular, short-term, practice-oriented courses, work-based learning, distance learning, online learning/e-learning/ blended learning, evening classes, and weekend classes.	37
MOALI should offer technical bachelor level agricultural education and training for mid-level agricultural technicians and graduates.	38
Internship programmes and on the job training should be developed so that a balance is created between school-based learning and work-based learning. Internship placements need to be monitored and coached actively, based on clearly defined learning objectives.	39
Policy makers should map out the current regional demands for SAI graduates, and use forecast trends for future alignment. This should be done using systematic collection and analysis of national and regional data on labour market skills demand, combined with tracer studies that allow the tracking of SAI graduate employability.	41
SAI career counselling programs should be developed that facilitate effective school-to- work transition and coach students in planning career development trajectories.	42
SAIs should develop specialized curricula and programs addressed to food processing, food safety and food quality (at AQRF level 3, 4); curricula and educational trajectories are also required for middle managers and employees (AQRF level 5/ technical bachelor).	43
SAI courses and training need to integrate climate smart approaches and focus on sustainable natural resource management.	43
Strategic investments in ATVET should focus on small- and medium-scale farming and value adding processes in order to promote the creation of dynamic rural economies and employment opportunities.	43

**labour market
oriented
qualification
and curricula**

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