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Youth participation in small-scale fisheries, aquaculture and value chains in Africa and the Asia-Pacific

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Executive summary

Youth as a social category is increasingly under the spotlight among governments and development actors. Demographic shifts and rising levels of youth unemployment are some of the main reasons for this concern. Youth populations continue to rise globally, with the number of individuals between 15 and 24 years of age expected to reach 1.3 billion by 2050, an increase that is particularly pronounced in Africa. This trend is, however, shadowed by high levels of unemployment among youth, conspicuously so when compared to adult populations.

In this context, the International Water Management Institute (IWMI) conducted an assessment of youth participation in small-scale fisheries (SSF), aquaculture and value chains, as part of the CGIAR Research Program (CRP) on Fish Agri-Food Systems (FISH). The geographical focus of the study was Africa and the Asia-Pacific, particularly the FISH focal countries of Egypt, Nigeria, Tanzania and Zambia (in Africa) and Bangladesh, Cambodia, Myanmar and Solomon Islands (in the Asia-Pacific). The study was conducted through a critical appraisal of peer-reviewed and grey literature and by conducting key informant interviews (KIIs).

The study finds that the contours of youth as a social category do not fall under strict definitions. While governments and international organizations typically define youth by age, who is considered a youth is in reality contextual and determined by a multitude of factors. These include the timing of entry into the labor market, education, gender, legal status and marital status, among others.

Regardless of definition, it appears that in many contexts, involvement in SSF, aquaculture and value chains, especially SSF is not the first choice of livelihood for most youth. An in-depth understanding of how youth participate in the SSF and aquaculture value-chains is, however, obscured by the limited number of studies available on the topic. Information on the participation of young women is scarcer.

A comparative study of youth involvement in the agriculture sector shows similar findings. It appears that young people show a lower affinity for engaging with farming as a livelihood in many parts of the world, driven by a confluence of political, socioeconomic and environmental factors. Youth who interact with the agriculture sector face a number of challenges, including limited access to land, inadequate access to financial services, limited access to markets, limited involvement in policy dialogues on issues that affect youth, and insufficient access to knowledge, information and education. The relationship between youth and agriculture is also understudied, though to a lesser degree than the SSF and aquaculture sectors.

A consequence of this knowledge gap is policymaking based on problematic constructions of the issue. This is reflected in the youth and sectoral policies in the focal countries. The life realities of most youth are considered to be removed from how they are frequently depicted in policies, for instance, as nation builders or those associated with sports-related activities. This is also the case with framing out-migration, a key livelihood aspiration and strategy for many rural youth, as a problem to address. Furthermore, youth are often grouped together with “vulnerable” groups, such as women, potentially generalizing how their needs are addressed. Some of the solutions proposed to tackle youth unemployment have also been subjected to criticism, such as the narrow focus in many policies on entrepreneurship strategies.

Two major shortcomings have been highlighted in the literature on youth and agriculture. First, many of the constraints and opportunities identified for youth are more structural in nature and also impact other social groups, making it important to understand where the impacts on youth differ. Second, the heterogeneity among youth and the diverse ways they engage in agriculture are not sufficiently recognized. Intersectional identities, the influence of social networks and systems, and livelihood aspirations can all contribute to this diversity. We identify the same shortcomings in the limited literature on youth participation in SSF and aquaculture.

We attempt to look at how and where youth participate in these two sectors, and how the opportunities and constraints of this engagement might impact youth differently from other social groups and, among youth, different groups. Many of the opportunities and constraints identified are also constantly evolving, and with them potentially the nature of youth engagement in SSF and aquaculture.

We find that youth are constrained in accessing land, financial services and other resources, and decision-making circles amid systems of gerontocracy. Even where access rights are made available, for example, to land or rights-based fisheries, youth might face difficulties navigating power structures to realize these rights. In accessing financial and other services, youth may find that their unique circumstances are not always recognized. For young women, the challenges of access and the realization of rights are even more acute.

Other challenges youth face include their limited knowledge and experience, interactions with ecosystems of diminishing productivity, aquaculture and SSF being associated in certain contexts with social stigma and low social status, and exploitative and discriminatory working conditions. Youth could possess limited knowledge and skills, both as a consequence of being young and not having had sufficient time to accumulate this resource, and because of constraints to access. Increasing youth enrolment in formal education, though beneficial in many ways, may diminish exposure to ecological and traditional forms of knowledge. Exploitative and discriminatory working conditions are presented by certain niches in the SSF and aquaculture value chains. Some of these niches can be characterized by a large number of young women workers, making these challenges more applicable to this group of youth.

While such substantial challenges exist, there could be potential in existing and newly opening up spaces for youth participation in SSF and aquaculture. The aquaculture sector appears to employ a large number of young people in certain contexts, and it is believed that this potential can be further strengthened. It might be possible that moving further down the value chain to areas such as processing and trading may hold opportunities for youth employment. Since young people are commonly associated with being agile, able to take risks, and responsive to new knowledge and technology, increased integration of information and communication technology (ICT) and a focus on entrepreneurship are widely considered as pathways for youth engagement. However, many of these possibilities remain largely conjectural and require detailed studies for validation across different contexts.

Finally, initiatives by governments and other stakeholders aim to expand opportunities for youth engagement, particularly in Africa. WorldFish has done some work on youth engagement in the past and aims to expand its work in this area going forward.

Taking stock of these findings, we recommend that further work is needed to understand better why, where, how (and which) youth engage in SSF and aquaculture, and how these sectors can be made more youth inclusive. In particular, we propose the following four research pathways:

1. understanding the impact of economic, political and social shifts at global to local levels on youth involvement in SSF and aquaculture
2. analyzing the policy architecture that impacts youth involvement in the SSF and aquaculture sectors
3. understanding the diversity among youth engagement in SSF and aquaculture
4. building a youth-oriented approach to SSF and aquaculture.

Chapter 1: Introduction

Objectives

IWMI, a managing partner of FISH, conducted an assessment of youth participation in SSF, aquaculture and value chains between November 2017 and May 2018. The assessment was conducted in Africa and the Asia-Pacific, with a particular focus on the FISH focal countries of Egypt, Nigeria, Tanzania and Zambia in Africa and Bangladesh, Cambodia, Myanmar and Solomon Islands in the Asia-Pacific. The objectives of this study were to (i) assess the participation of youth in fisheries and aquaculture, including opportunities and challenges for participation, (ii) understand what WorldFish and key partners (government organizations, nongovernmental organizations [NGOs] and others) are doing in the focal countries in relation to youth participation, and (iii) (based on the former two points) provide potential areas for further research that could support improved youth participation in aquaculture, SSF and value chains. In this report, definitions of SSF and aquaculture are adopted from WorldFish.

Methodology

The current situation of youth participation in SSF and aquaculture was determined by conducting (i) a critical appraisal of peer-reviewed and gray literature and (ii) KIs.

The first step of the literature review involved searching the databases of the IWMI library, ProQuest and CAB Direct, using a single search string on the database query. From the topics of “small-scale fisheries,” “aquaculture production” and “fish value chains,” search results were filtered for the subcategories of “youth,” “young” and “school leavers.” This search revealed few articles, and even fewer that were applicable to this study. Those that were applicable considered the involvement of youth in SSF, aquaculture and value chains in significant detail, either looking at youth as an explicitly stated category or where a large number of individuals studied fell into the age class of youth. Of the 66 search results that were yielded, 37 were reviewed and 13 were referenced. Following this, relevant sources of information were identified through the Google and Google Scholar search engines using a snowballing method as well as recommendations from the key informants. The sources included journal articles, books, online articles, regional and national policies and strategies, and reports from various institutions and programs (such as FISH and government offices from the focal countries). Additionally, documents related to youth involvement in agriculture were also reviewed. In total, 205 documents available online and in print were reviewed, of which 121 were relevant to this study.

The KIs were conducted with the aid of a semi-structured questionnaire (Annex 1), which was developed based on the objectives of this study. Primary data was collected by conducting interviews and collecting information (through Skype and email) from relevant experts from WorldFish/FISH and partner organizations. Annex 2 provides the list of interviewees. A total of 21 key informants were interviewed.

Chapter 2: Why youth? Youth populations and the challenge of employment

Key findings

“Youth” is widely considered to be the period of transition from childhood to adulthood. It is determined by a number of factors, including age and also the timing of engagement with the labor market, education, gender, legal status and marital status, among others. These contextualities result in diverse understandings of who is considered a youth. Age brackets adopted for this demographic by development organizations at the global level can vary from those adopted by countries and regional organizations in Africa and the Asia-Pacific, while both definitions can be removed from local community perceptions of who is considered a youth.

Regardless of definitional constrictions, it is widely accepted that the number of young people continues to increase worldwide. Such numbers, along with high rates of unemployment among youth in these regions, have meant that they are increasingly an important demographic group among global development and policy circles. The Asia-Pacific currently hosts a significant proportion (60%) of those under this age category, but youth account for nearly half of those considered unemployed in this region. Similarly, while youth numbers in Africa are rising sharply (60% of the continent’s population is below 24 years old), only three million new jobs are created every year for the nearly 11 million young people entering the labor market.

For the rising numbers of youth with a formal education, the employment opportunities available often do not align with their own aspirations. For youth with lower levels of education, while their transition to employment might be more rapid, these opportunities are usually poorly paid and under substandard working conditions. Many young people are increasingly turning to migration to urban areas and other countries as an important livelihood strategy.

Defining youth

The world’s youth population continues to increase, with the number of individuals between 15 and 24 years old expected to reach 1.3 billion by 2050. This would amount to 14% of the global population, with the majority coming from countries in Africa and the Asia-Pacific (FAO, CTA and IFAD 2014). Currently, nearly 90% of individuals between 10 and 24 years of age live in low- and middle-income countries (Blum and Boyden 2018).

Youth owe their status as a social category to constructions and reconstructions, both cultural and historical (Leavy and Smith 2010). Some arguments pin present-day conceptions of youth to origins in industrial capitalist societies in the late eighteenth and early nineteenth centuries. During this time, the labor needs of capitalist

systems and government bureaucracies led to the development of formal schooling and extended periods of education, creating an intermediate transition period between childhood and adulthood (Sukarieh and Tannock 2008).

As it is understood today, youth is widely considered the period of transition from childhood to adulthood, comprising processes of sexual maturation as well as increasing social and economic independence from parents and carers (Leavy and Smith 2010; White 2012; Pyburn et al. 2015). A number of factors can determine youth, including age and also the timing of engagement in the labor market, education, gender, legal status and marital status, among others (Pyburn et al. 2015). Who is considered as a “youth” can, therefore, vary considerably depending on the context.

For the purpose of this study, the definitions of youth by governments and international organizations from the focal countries are discussed in Table 1.

As indicated in Table 1, there appears to be no universal age definition for youth. Furthermore, the upper age limit as defined by the countries and regional organizations in Africa and the Asia-

Country/organization	Age bracket ¹	Source/notes
Africa		
Egypt ²	18–30	Ministry of Youth (Sika 2016)
Nigeria	18–35	Second National Youth Policy 2009 (Federal Ministry of Youth Development, 2009)
Tanzania	18–35	National Youth Development Policy 2007 (Ministry of Labour, Employment and Youth Development, 2007)
Zambia	15–35	National Youth Policy 2015 (Ministry of Youth and Sport, 2015)
African Union	15–35	African Youth Charter 2006 (AUC 2006).
Asia-Pacific		
Bangladesh	18–35	National Youth Policy 2017 (Draft) (Ministry of Youth and Sports 2017)
Cambodia	15–30	National Policy on Youth Development 2011 (Ministry of Education, Youth and Sport 2011)
Myanmar	15–35	Youth Policy, the Republic of the Union of Myanmar 2017 (Ministry of Social Welfare, Relief and Resettlement 2017)
Solomon Islands	15–34	National Youth Policy 2017-2030 (Ministry of Women, Youth, Children and Family Affairs 2017)
Association of Southeast Asian Nations (ASEAN)	15–35	As defined by the ASEAN member countries, the overall youth age bracket is 15–35 years old (ASEAN and UNFPA 2017)
Global organizations/associations		
International Labour Organization (ILO)	15–24	ILO 2016
The Commonwealth	15–29	The Commonwealth 2018
United Nations	15–24	UNESCO 2019

Notes

¹ According to the United Nations Convention on the Rights of the Child, a child means “every human being below the age of eighteen years unless under the law applicable to the child, majority is attained earlier” (www.ohchr.org/en/professionalinterest/pages/crc.aspx). Therefore, there could be some overlap between individuals considered as “children” and “youth.”

² Egypt does not have a youth policy at present. According to the Ministry of Youth, youth are young individuals between 18 and 30 years old. The former ruling National Democratic Party (NDP) defined youth as individuals aged 18 to 35. The Central Agency for Public Mobilization and Statistics (CAPMAS) defines youth as individuals aged 15 to 29. Government institutions refer to “youth” in general, without defining who is a youth (Sika 2016).

Table 1. Definitions of youth by governments and international organizations in focal countries.

Pacific is higher when compared to the definition adopted by more global organizations, such as the UN. The reason for this trend is unclear. However, individuals in several societies are increasingly being perceived as youth for a longer period, when compared to previous generations. Both the number of young people enrolled in education and the period of enrolment are being gradually extended, which has postponed the age at which these individuals enter employment and marriage. This phenomenon is particularly pronounced for rural youth (White 2012).

The key informants reiterated that different communities in the focal countries perceived and defined youth differently. In certain communities individuals can be perceived as being in the youth category until they are married. Some key informants questioned whether marital status should be factored in, if an individual can still be considered a youth after marriage and starting a family. Children who have stopped schooling early might be considered youth before their peers. Who is considered a youth can also have a gendered angle. In cultures where men typically get married at an older age than women, they might consequently be perceived as being “youthful” for a longer period. Women can also be expected to act more as adults after puberty, as certain cultural restrictions set in following this time.

All of the key informants adopt national definitions where they exist. Other approaches are adopted where required, for example, using the definitions from project partner organizations. The Youth Strategy of the CGIAR Research Program on Dryland Systems proposes, for future work, splitting the teenager youth group (aged 15–19) from older groups, the former group being different in terms of physical strength and maturity as well as susceptibility to health risks (CRP on Dryland Systems 2015).

Youth and the challenge of employment

Youth as a social group have been gaining prominence in global development and policy circles, marked by milestones such as the UN declarations of 1985 and 2010 as International Years of Youth. In parallel to this, policymakers and governments have been encouraged by UN agencies, such as the International Labour Organization (ILO), United Nations Development

Programme (UNDP), United Nations Children’s Fund, and United Nations Educational, Scientific and Cultural Organization, to target the needs of youth as a priority (te Lintelo 2012).

Demographic changes and high levels of unemployment among youth underlie this increasing interest in the world’s youth. The increase in youth numbers across the world is described as a youth bulge, and often associated with this is the idea of a demographic dividend. A demographic dividend is where a large number of young people (relative to the number of dependents) enter employment at a given point in time, with the potential to accelerate economic growth in the country (Ayele et al. 2017). The realization of this potential, however, largely hinges on the ability of the economy to create productive employment opportunities to match the demographic dividend (te Lintelo 2012; Ayele et al. 2017). When a country’s economy cannot meet this challenge, high levels of unemployment and underemployment among young people can accompany youth bulges (Ayele et al. 2017). A related concern is that when young people cannot find or be provided with gainful employment, they could turn to risky behaviors and situations, contributing to social and political instability (Ayele et al. 2017).

Youth in Africa

In Africa, youth represent the largest percentage of the population. Over 60% of Africa’s population (960 million) is under the age of 24, and 75% is under 35. The share of youth in the labor force, however, is approximately 35% in sub-Saharan Africa and 40% in North Africa (FAO 2018a). In line with this, the African Development Bank (2017) revealed that, on average, about 11 million people enter the job market in Africa, while only about three million new jobs are created on the continent, leading to an annual estimated employment gap of about eight million. These figures suggest that youth unemployment and underemployment resulting from slow growth in the demand for labor combined with a rapidly growing supply of labor could pose important development challenges for the continent. Furthermore, the number of youth considered “educated and unemployed” is becoming increasingly prominent as a category of those unemployed. For youth who

do find employment, an overwhelming number of opportunities tend to be in the informal economy with low wages (te Linteló 2012).

When considering the focal countries, the unemployment rate in Zambia was 12.5% for individuals aged 15 to 19 and 15.3% for those aged 20 to 24 (Syed and Jabeen 2016). In Nigeria, data from the National Bureau of Statistics (2010) revealed that the unemployment rate for those aged 15 to 24 was 41.6%, while it was 17% for those aged 25 to 44. In Egypt, the youth unemployment rate in 2012 was 19% for 15- to 24-year-olds and 16.4% for those aged 15 to 29 (Said 2015). In Tanzania, the official youth unemployment rate is 6.5% among 14- to 25-year-olds and 9.9% among those aged 15 to 35 (Haji 2015).

Youth in the Asia-Pacific

The Asia-Pacific is currently home to nearly 60% of 15- to 24-year-olds in the world, which accounts for 16% of the region's population (UN 2015). Moving into the future, while these numbers will continue to remain substantial, they are expected to trend downward in all subregions of the Asia-Pacific (UN 2015), in contrast to the rising numbers in Africa. However, this number accounts for nearly half of the individuals considered jobless across the Asia-Pacific, a region where unemployment is generally considered low in comparison to the global average (ILO 2017 and 2018a). Among the countries that are the focus of this report, the proportion of 15- to 24-year-olds that were unemployed was 12.8% in Bangladesh (2017), 1.1% in Cambodia (2016), 4% in Myanmar (2017) and 1.3% in Solomon Islands (2013) (ILO 2018b). These numbers are also reflective of the disparities within the region.

Reflecting trends in Africa, there is a substantial mismatch between the employment aspirations of these youth and the opportunities available to them. This is illustrated by the unemployment rates among youth with a secondary education or higher, which is twice that among youth with a primary education (UN 2015). For youth with lower levels of education, while their transition to employment might be more rapid, these opportunities are usually short term, with poor pay, long working hours and substandard working conditions (ILO 2018a; UN 2015). As a result, high

levels of poverty are prevalent among youth who do find employment opportunities (working poverty rates, measured at the threshold of USD 2/day) (UN 2015). Many young people choose to migrate to urban areas or other countries. In 2013, of the 40 million international migrants in the Asia-Pacific, 25% were individuals under 29 years of age and nearly half were female (UN 2015).

For many of the young people from low- and middle-income countries in Asia, Africa and Latin America, employment is not a choice, but a necessity. These young people (defined in the study as being between 10 and 24 years old) spend a greater proportion of their time working to support their families, in comparison to their counterparts from high-income countries and societies (Blum and Boyden 2018). In understanding issues related to youth and employment, Blum and Boyden (2018) called for the need to abandon Western notions of adolescence and youth being predominantly a time of independence and risk taking, and instead focus on issues of poverty, social marginalization, the need to find employment, and barriers in access to services youth face in middle- and low-income countries.

Chapter 3: Youth and the agriculture sector

Key findings

While the agriculture sector is the largest employer in many low- and middle-income countries, it is widely believed that young people show a lower affinity for engaging with farming as a source of livelihoods in many parts of the world. Apart from concerns regarding the impact on youth employment levels, this also raises questions regarding the future of smallholder agriculture and global food production.

A confluence of political, socioeconomic and environmental factors is driving this trend. Within this context, youth who engage in the agriculture sector face a multitude of challenges, such as insufficient access to knowledge, information and education, limited access to land, inadequate access to financial services, difficulties accessing green jobs, limited access to markets and limited involvement in policy dialogues on issues that affect youths.

Despite these concerns, the relationship between youth and agriculture has largely remained understudied. It is further felt that such a lack of empirical studies has led to simplistic and problematic constructions of the nature of the problem and policy responses to it.

Two key shortcomings are associated with existing studies on the topic.

First, many of the constraints (and opportunities) identified in relation to youth and agriculture are structural in nature. Such structural factors can be at the (i) global level, through changing demand for agricultural resources, the consequences of climate change, and increasingly liberalized and globalized economies, and (ii) local level, through processes such as structural and rural transformation. Further work is required to understand how these factors create opportunities and constraints that impact only young people involved in agriculture or impact young people differently from other social groups.

Second, youth are largely considered a homogeneous group, uniformly impacted by opportunities and constraints to engage in the agriculture sector. Youth can bear multiple, intersectional identities with intersecting power dynamics. They are also not atomized individuals, but are embedded in social systems and networks. Youth can also have diverse aspirations regarding livelihoods about which little is known. Any future studies that seek to address these shortcomings could use work on the different domains of women's empowerment as a useful starting point.

In our review of information on youth involvement in SSF, aquaculture and value chains, we use the discussions on the topic of youth involvement in the agriculture sector in shaping some of our analysis. We make an attempt to look at how and where youth engage in aquaculture and SSF, and how opportunities and constraints to engage in these sectors might impact youth differently from other social groups and, among youth, different groups. We find that the existing studies and information regarding youth involvement in SSF and aquaculture also share the shortcomings associated with studies from the agriculture sector.

The agriculture sector is the largest employer in many low- and middle-income countries (White 2012). Despite this, it is widely believed that young people are increasingly moving away from farming

as a source of livelihoods and migrating to urban areas in search of alternatives (Leavy and Smith 2010; White 2012; Leavy and Hossain 2014; Deotti and Estruch 2016).

This trend is placed within concerns about the future of smallholder agriculture and the need for food production to meet the needs of a growing global population. With nearly 80% of the Global South (countries seen as low- and middle-income in Asia, Africa, Latin America and the Caribbean by the World Bank) relying on smallholder agriculture for its food security, young people leaving behind farming livelihoods can have substantial consequences for the size and sustainability of the future workforce required for smallholder farming (Leavy and Hossain 2014).

This trend is believed to be driven by a confluence of political, socioeconomic and environmental factors. A general shift toward de-agrarianization of economies (Leavy and Smith 2010) has run parallel to low levels of support from governments in developing and maintaining rural infrastructure, providing other forms of support to rural areas, and the general downgrading of rural and farming livelihoods in most parts of the world (White 2012). The possibility of achieving a higher education, educational systems that do not entice or prepare youth for the future (White 2012), and broadened exposure to the world outside through media (increasingly the Internet) have also meant that young people in rural areas are more aware of urban-rural and other differences and inequalities (Leavy and Smith 2010). Young people are, therefore, increasingly striving for futures that are different from what has been traditionally available to them (Leavy and Smith 2010).

Youth engagement in the agriculture sector

Youth who might envision a future in agriculture find themselves facing a multitude of challenges. FAO, CTA and IFAD (2014) categorized these as six challenges: (1) insufficient access to knowledge, information and education, (2) limited access to land, (3) inadequate access to financial services, (4) difficulties accessing green jobs, (5) limited access to markets, and (6) limited involvement in policy dialogues on issues that affect youth. Of these, the challenges that appear more prominently in the studies reviewed—insufficient access to knowledge, information and education, and limited access to land, financial services and other resources—are discussed in more detail in the following sections. Solutions devised to overcome these challenges in particular contexts are discussed in Boxes 1 and 2.

Access to knowledge, information and education

Negative attitudes of farming and limited access to information are considered important reasons for youth to look for opportunities away from traditional livelihoods. (IFAD 2016). The general consensus is that the formal educational systems in many countries do not equip young people for a future in the agriculture sector. While enrolment in educational systems continues to rise, there is little emphasis in most curricula, including those in vocational and rural training programs, on providing youth with the knowledge and skills they could use as farmers, or even on depicting agriculture as a promising option for employment (Pyburn et al. 2015). White (2012) referred to this as part of an “assault on rural culture” and part of a bigger trend of downgrading rural life and farming as an occupation. These factors combined also contribute to a “skills mismatch,” where youth in many countries are trained for occupations that can absorb far fewer numbers (UN 2015).

Rising levels of enrolment in formal education systems can also be associated with a decline in the accumulation of traditional agroecological knowledge among youth. In many societies, children and young people assimilate unique agroecological and technical knowledge and skills related to specific livelihoods through observations and participation in household labor, often alongside education. However, as formal educational attainment becomes an essential aspiration for families, and as children and youth are encouraged to enroll and remain enrolled in education for longer, the amount of time spent on contributing to their households’ livelihoods diminishes, along with a loss in these skills and knowledge (Punch and Sugden 2013). This decline could become problematic in the face of the aforementioned lag between the jobs young people are trained for and the actual opportunities available to them. Furthermore, White (2012) viewed such instances of children working together with their families alongside their education as a valuable means of skill accumulation and also cautioned against such practices being mischaracterized as a form of child labor.

Extension services can play an important role in providing the entire gamut of information and services that farmers require. However, extension

services can typically direct their focus on more established farmers, ignoring groups such as youth (McNamara and Bohn 2017). Training programs that reach youth often only cater to the needs of young men, at the expense of those of young women (FAO, CTA and IFAD 2014).

Access to land, financial services and other resources

Land access appears to be the issue that has gained the most prominence in studies related to youth involvement in agriculture. Globally, youth view accessing land as a central step in entering agriculture (Tadele and Gella 2012; White 2012). However, land remains a central challenge for youth participation in this sector. This is driven by increasing fragmentation (Jayne et al. 2012), decreasing ecological productivity (Leavy and Smith 2010), and both old and new forms of barriers to accessing land (Amanor 2010; Chinsinga and Chasukwa 2012; Tadele and Gella 2012; White 2012).

In many societies, the predominant method of accessing land is through inheritance, as many youth cannot afford to purchase land. However, owning land is also seen as a prerogative of adulthood. As the age at which a person is considered a youth rises and, associated with this, the age at which marriage first takes place, young people find themselves waiting increasingly longer to access their plots of land (FAO, CTA and IFAD 2014; Pyburn et al. 2015). As they await their turn to own land, young people might work on the

family land, but with limited roles in management or decision-making because of the gerontocracy prevalent in many societies (White 2012; FAO, CTA and IFAD 2014).

Kosec et al. (2017) explores the relationship between access to land through inheritance and engagement in the agriculture sector in rural Ethiopia. The study finds that in some areas the expectation of land inheritance, particularly larger plots of land, lowered the chances of permanent migration, including to urban areas. Such land inheritance also significantly increased the chances of young people being self-employed in agriculture (Kosec et al. 2017).

Young women face further challenges in relation to land access, including not being able to inherit or access land, even where national laws prescribe such rights (FAO, CTA and IFAD 2014). In South Asia, for example, land inheritance is often governed by personal laws, and customarily patrilineal in many cultures. Even where states have intervened in such instances with progressive legal reforms, inequalities continue to persist. While the legal systems alone can be egalitarian, where these rights lack social legitimacy, legal rights do not necessarily translate into women being able to exercise these rights or to have complete control over the resource. In cases of matrilineal and bilateral inheritance too, ownership may not necessarily translate to effective control of the resource, both legally and otherwise (Agarwal 1994).

Box 1. The Audio Conferencing for Extension project.

The Audio Conferencing for Extension (ACE) project taps into the use of ICT to enable young farmers to access extension services they require, as well as information on the opportunities and challenges in becoming agripreneurs. A project by the Savannah Young Farmers Network, a youth-led NGO from northern Ghana, brings together young farmer groups that connect remotely to groups of extension workers and researchers through mobile phones, audio conferencing technology and portable loudspeakers. The arrangement solves the problem of infrequent visits by the extension workers to distant areas. In addition, it allows the farmers to influence the type of extension information they receive. Community agricultural information officers assist the farmers in producing videos of problems they might encounter and any solutions they have devised. These videos are uploaded on the internet to obtain specific extension advice. Through this scheme, the farmers are also able to connect with public and private sector representatives, as well as buyers, aggregators, representatives of financial institutions, and suppliers of farm machinery.

Source: FAO, CTA and IFAD 2014.

Across the world, farming systems are undergoing processes of rural transformation, commercialization and commodification, with changes at national and international levels having substantial implications for young people that want to hold on to farming livelihoods. Amanor (2010) found that in Ghana, commodification of land is leading to ownership being concentrated with increasingly smaller groups of farmers, with poorer youth facing an uncertain future in farming. In Malawi, stalled land reforms in the interest of the bureaucratic and political elite have marginalized young people of smallholder families from meaningful participation in the “green revolution success story” of the country’s agriculture sector (Chinsinga and Chasukwa 2012).

While land management used to be the domain of communities, lineages or clans, it is becoming increasingly individualized. Economic hardship can often propel families to sell their land to outsiders. Younger family members rarely play a role in decisions to sell land, although as future owners of the land, they would have important stakes in such decisions (White 2012; FAO, CTA and IFAD 2014). Intergenerational issues of equity have been raised in relation to the escalating number of government-supported, large-scale corporate acquisitions of common lands taking place across the world (White 2012). Young people usually find themselves peripheral in the transaction processes (Chinsinga and Chasukwa 2012), although such deals may permanently alter their futures in farming (White 2012).

Apart from land, access to other inputs and support services is also more challenging for youth. In general, financial services such as credit, savings and insurance are inaccessible to most

young people. Few financial service providers target youth as a specific group or provide services specific to their needs. Furthermore, in many instances, youth are perceived to be a high-risk category for lending. They typically do not have access to the financial guarantees that lending institutions usually require, such as property under their names or steady employment, and this further restricts their chances of borrowing. Institutions that youth may be able to access more easily, such as microfinance institutions, often charge high interest rates (FAO, CTA and IFAD 2014).

Chinsinga and Chasukwa (2012), through an examination of the Farm Input Subsidy Program by the Government of Malawi, discussed this lack of recognition of the particular needs of youth with regard to inputs and support services. Although credited with having made significant changes to national agricultural productivity, the program largely excludes youth in its criteria of vulnerable segments of society, constraining most youth from obtaining these subsidies (Chinsinga and Chasukwa 2012).

Youth involvement in agriculture as an understudied area

While the relationship between youth and agriculture has been the subject of increasing focus in policy and development circles, with the exception of a few studies, the topic has largely remained understudied (Sumberg et al. 2012; FAO, CTA and IFAD 2014; Pyburn et al. 2015). Filmer and Fox (2014) suggested that the conceptual separation of the discourse and efforts to expand agricultural growth and enhance food security from that of improving

Box 2. The Small Landlords, Large Tenants program.

Recognizing that accessing land in gerontocratic systems is a significant challenge faced by youth trying to enter the agriculture sector, the Council of Agriculture in Taiwan, Province of China (as referred to in FAO, CTA and IFAD 2014), has introduced an innovative program known as Small Landlords, Large Tenants. The program attempts to encourage older farmers who may not be farming their lands to lease them on long-term contracts to young farmers through a farmland database. The database is managed by farmer organizations. The elderly farmers also consult the young tenants, who in addition also receive training on agricultural production. The program appears to have been successful, with the tenants having access to land that is much larger than average farm sizes in the area.

Source: FAO, CTA and IFAD 2014.

employment opportunities for youth could be a key contributor to this knowledge gap.

An indication of the paucity of knowledge is reflected in the availability of statistics on rural youth, particularly in the lack of disaggregated data (FAO, CTA and IFAD 2014). Even where statistics are available, they can be misleading. For instance, employment trends are captured through statistics that identify the total number of employed and unemployed, with little information on the gradient in between. This information might not accurately reflect ground realities, for example, in rural Africa, where unemployment is low, yet underemployment is considerably high (Ayele et al. 2017).

Sumberg et al. (2012) argued that the lack of empirical studies and analyses of the relationship between youth and agriculture and the future of the agriculture sector has led to simplistic and problematic constructions of the nature of the problem and policy responses to it. The lack of analyses also results in policymaking removed from reality. Among development policies in Ethiopia, for example, young, literate and trained farmers are framed as being intrinsic to agricultural transformation. However, in reality, few young people in the country envision a future in farming, and many aspire to migrate out of the sector (Tadele and Gella 2012).

In the following section, we discuss certain shortcomings of existing studies, largely drawing on work by Sumberg et al. (2012) and Ripoll et al. (2017).

1. Many of the constraints (and opportunities) identified in relation to youth and agriculture are structural in nature and do not solely affect youth as a social group.

Ripoll et al. (2017) argued for the need to distinguish between opportunities and constraints that impact only young people involved in agriculture (or might impact young people differently) from more structural opportunities and constraints commonly felt by all social groups engaging in agriculture. The authors argued that many of the issues identified as affecting only young people, such as limited access to land and credit, in reality fall into the first category, and youth-specific interventions in this regard are less

likely to be successful (Ripoll et al. 2017). In the case of sub-Saharan Africa, Losch (2016) cautioned against a silver bullet approach to creating employment directly for youth, and makes the case for youth policy to be embedded in a more overarching approach to inclusive economic and social development.

Structural opportunities and constraints can originate at different levels. At the global or regional level, it includes factors such as population growth, increasing and changing demand for food, and rising demand for biofuels and the resulting growing demand for agricultural land and resources (Sumberg et al. 2012). It also includes the evermore prevalent consequences of climate change. Finally, a liberalized global economy means a gradual shift in national production policies from an emphasis on local and national markets to more export-import-oriented approaches (Losch 2016; Ripoll et al. 2017).

At the national level, Ripoll et al. (2017) proposed that any approach to youth involvement in agriculture be placed in the context of structural and rural transformation. In Africa, particularly sub-Saharan Africa, the nature of rural transformation and limited industrialization means that the non-farm economy can absorb only a fraction of the rising youth population in the continent. At the same time, growing levels of land fragmentation and scarcity pose serious threats to the productivity of the agriculture sector and opportunities for gainful livelihoods that the sector can provide (Ripoll et al. 2017). These processes will be felt differently by different areas. There is also a need to recognize the tremendous diversity that exists between rural areas, as highlighted by Wiggins and Proctor (2001), for example, with regard to natural resource endowment, and proximity to cities and markets.

Within the agriculture sector, these trends have meant a restructuring of agri-food systems at the local level (Ripoll et al. 2017). Furthermore, Anyidoho et al. (2012a) and Sumberg et al. (2012) argued that current approaches tend to focus largely on primary production and rural farming and do not sufficiently take into account the changes to other segments of agri-food chains. These include processing, retailing, marketing and exporting, and interactions with large-scale commercial enterprises and the opportunities that they afford for engagement in the sector.

The impact of these structural constraints, where felt more uniformly by all social groups, can become a more significant concern for one group (in this case youth) over time. Where rural transformation leads to more intensive and commercialized forms of agriculture, land and other agricultural assets would increase in monetary value. Lack of access to such assets then becomes a more significant barrier to youth attempting to participate in the agriculture sector as producers, unless they have access through other means, such as inheritance (Ripoll et al. 2017).

2. Youth are considered a homogeneous group, uniformly impacted by opportunities and constraints to engage in the agriculture sector, regardless of individual characteristics and circumstances.

The exclusion of considerations of heterogeneity among young people in work on youth and agriculture (Sumberg et al. 2012; Ripoll et al. 2017) manifests in “essentialist thinking”—that all young people are entrepreneurial, more innovative and agile when compared to other social groups. A similar assumption is that all young people have equal ability and opportunity in accessing agricultural value chains (Ripoll et al. 2017).

Youth are not a homogeneous group of individuals, but bear multiple intersectional identities, with differing abilities to maneuver the opportunities and constraints that the agriculture sector can create for them. These social identities include gender and also class, caste, ethnicity, disabilities, education and employment, to name a few, with intersecting, and sometimes competing, power dynamics. These different power dynamics can also evolve over time. While young people might experience limited economic independence, with time, young men might be able to shed this constraint, whereas young women could find it harder to do so because of gender relations and social norms (Pyburn et al. 2015).

Young people are also not atomized individuals, but are embedded in social systems and networks of families, friends and communities. Within the household, children, parents and other members are associated with agency, objectives and interests, with the agency of young people

embedded in the system of power relations within the household (Huijsmans 2014). This would have a bearing on how youth interact with agriculture, as well as their aspirations for their lives, including in the agriculture sector.

The agency of young people has not received a lot of focus in studies related to youth and agriculture, as evidenced by studies that tend to adopt “push-pull” framings, for example, considering youth as being forced to leave the agriculture sector (Sumberg et al. 2012). In relation to this, little is known so far of the aspirations of youth, particularly rural youth (Leavy and Smith 2010; Anyidoho et al. 2012a). Aspirations can shape life choices—the perceptions young people have of themselves, their lives and their life outcomes. Aspirations are dynamic and are determined by socioeconomic context, social and cultural norms, the influence of family members and others, gender, education and media, among other factors (Leavy and Smith 2010). Therefore, it is important to gain a better understanding of the diverse aspirations of young people to help identify (i) how their lives and livelihood choices intersect with the agriculture sector, (ii) their perceptions of the opportunities and challenges to engaging in the sector, and (iii) the factors that might make the sector attractive to youth as a choice of employment. Finally, Sumberg et al. (2012) argued that livelihood choices and decisions about where an individual would want to live are rarely permanent, and that a life course approach would be more suitable in understanding how young people’s interactions with agriculture and rural life change over time.

Any potential work that aims to address the topic of heterogeneities could build on existing work from the field of gender studies, particularly work on analyzing agency, relations and structure as the three domains of women’s empowerment. Studies and findings on how changes to these domains (as described in Box 3) can contribute to improving women’s empowerment can be used to inform future work on how equitable youth participation in the agriculture sector and the benefits of this participation can be further strengthened.

Sumberg et al. (2012) and Ripoll et al. (2017) have put forward approaches for future work on youth involvement in agriculture.

Sumberg et al. (2012) proposed the concept of “opportunity space”—“the spatial and temporal distribution of the universe of more or less viable options that a young person may exploit as she/he attempts to establish an independent life.” Opportunity spaces are in a constant state of flux, determined by forces from local to global scales. A young person is able to take advantage of the opportunity space available to them based on social factors and relations. The authors suggest three research approaches in applying this analytical framework: (1) a political economy approach that looks at interconnections between international and national processes, and local agrarian systems, (2) studies of policy processes in relation to youth and agriculture, and (3) studies that look at what factors determine young people’s interest, and how they fare, in the opportunity spaces (Sumberg et al. 2012).

Ripoll et al. (2017) suggested an expanded framework. The proposed framework is in the context of Africa, but the authors feel that its application could be extended to other geographies, including the Asia-Pacific.

The framework developed by Ripoll et al. (2017) looks at how the macro context (climate change, changing global food system, national policy) interacts with the local context (quality of natural resources, accessibility of markets, dynamics of rural transformation), and how local legal, regulatory, social and cultural structures lead to differentiated outcomes for different youth.

Rural transformation is highlighted as a critical component that has remained largely ignored in studies up to now. From the standpoint of individual youth, these outcomes are then determined by individual circumstances, individual and collective agency, and aspirations (Ripoll et al. 2017). The authors suggested a dual approach: a heavier emphasis on structural and policy changes that impact rural livelihoods and, alongside this, studies that look at how young people interact with the agriculture sector. It was also suggested that a better understanding is needed of the different (and changing) ways that various categories of youth interact with the agriculture sector, to better uncover youth-specific constraints to engagement.

Youth involvement in small-scale fisheries, aquaculture and value chains in Africa and the Asia-Pacific: Our approach

We review the available studies on youth involvement in SSF, aquaculture and value chains, as well as information obtained from the KIIs using discussions on the topic of youth involvement in the agriculture sector to shape some of our analysis.

While we review our findings on youth involvement in SSF, aquaculture and value chains adopting a youth lens, we are aware that many of these opportunities and challenges are shared with other social groups. Within this context, we make an attempt to look at how youth engage in

Box 3. The Women’s Empowerment Framework.

According to the Women’s Empowerment Framework, there are three domains of empowerment:

1. Agency: individual and collective capacities (knowledge and skills), attitudes, critical reflection, assets, actions, and access to services.
2. Relations: the expectations and cooperative or negotiation dynamics embedded within relationships between people in the home, market, community, and groups and organizations.
3. Structure: the informal and formal institutional rules that govern collective, individual and institutional practices, such as environment, social norms, recognition and status.

Empowerment is conceived as both the process and outcome within the concepts of power and social change (CARE 2006). The three domains interact and influence each other. For example, an individual’s aspirations and attitudes will be shaped by social norms and practices as well as their relationships and support networks (Hillenbrand et al. 2015).

Sources: CARE 2006; Martinez and Wu 2009, as cited in Hillenbrand et al. 2015; Morgan 2014.

SSF and aquaculture, and how opportunities and constraints to engagement might impact youth differently from other social groups and, among youth, different groups. We find a few instances where the greater proportion of individuals engaging in certain aspects of SSF and particularly aquaculture value chains are youth, in which case experiences of engagement might be relatively more specific to these individuals. In addition, in light of certain trends such as what appears to be increasing levels of youth migration (or the aspiration to migrate) from these sectors and rural areas, it is possible that certain aspects of changing patterns of engagement in SSF and aquaculture could be more specific to youth.

However, reflecting the broader literature on youth involvement in the agriculture sector, we find that existing studies and information regarding youth involvement in SSF and aquaculture also do not sufficiently take into account the following:

1. *Many of the constraints (and opportunities) identified in relation to youth and agriculture are structural in nature and do not solely affect youth as a social group:* We find that most of the information reviewed does not sufficiently take into account the structural nature of many of the constraints and opportunities with regard to youth engagement. While there is some information on how some of these constraints and opportunities are specific to youth in certain aspects, further research is needed in this area.
2. *Youth are considered a homogeneous group, uniformly impacted by opportunities and constraints to engage in the agriculture sector, regardless of individual characteristics and circumstances.* We find that while there is some discussion of gender as an important intersectional identity, other intersectionalities have not been explored in detail. Similarly, little is known about the influence of agency (and aspirations), relations and structure in determining youth engagement in agriculture.



Young woman selling fish, Cambodia.

Chapter 4: The policy landscape

Key findings

A common theme across youth policies and strategies is the framing of youth as “human capital” and as those responsible for their countries’ development as adults. In parallel to this runs the concern of high levels of youth unemployment that needs to be addressed, if this potential is to be met. Institutionally, however, the ministries that have the joint mandate of youth and sports show a tendency to associate young people more with sports and play rather than employment.

These depictions are considered paternalistic, with youth being imposed with an external vision of how their needs are to be met. These depictions are also often removed from the realities of the lives of youth, a disconnect further emphasized by the lack of their participation in most policymaking processes.

Two approaches dominate in most policies tackling youth unemployment: (1) enabling youth to fill employment opportunities that the market offers and (2) supporting youth to become entrepreneurs. While expanding the entrepreneurship capabilities of young people features heavily in many policies, the emphasis on entrepreneurship has also been the subject of criticism, including those that cite a lack of evidence yet of the success of such an approach.

Not all sectoral policies on agriculture, fisheries and aquaculture make explicit mention of youth as a target category. Such a focus is more apparent in Africa. Among sectoral policies that mention youth as a specific category, a recurrent theme is lumping youth together with women and other groups that are considered to be “vulnerable.” Such an approach can, however, lead to generalizations regarding the characteristics and needs of the entire group.

A second frequent theme among sectoral policies is the need to address youth disengagement with the agriculture, SSF and aquaculture sectors, and migration away from rural areas. However, such an approach may not sufficiently consider youth aspirations for their livelihoods, and the realities of migration strategies often being an essential component of the well-being of rural youth.

The policy landscape can be indicative of how the current and future engagement of youth in SSF and aquaculture are perceived by governments and other stakeholders, such as development institutions.

In the following section, we look at how country or regional policies and strategies approach the topic of youth livelihoods in SSF and aquaculture. Given the parallels that might be drawn with youth engagement in agriculture, we also consider comparative policies from the agricultural sector. Where the function of fisheries or agricultural policies appears to be met by more overarching development policies or strategies, these are also considered. We pay attention to how youth as

a social group are framed in youth policies and strategies, how the topic of improving youth livelihoods and employment is approached, and what place, if any, agriculture, SSF and aquaculture have in these documents. In the sectoral policies, we look at how “youth inclusion” is considered in broader plans for sectoral development.

Tables 2 and 3 look at youth policies and how they approach youth livelihood development, including livelihoods in agriculture, fisheries and SSF, in Africa and the Asia-Pacific, respectively. Tables 4 and 5 look at the youth inclusivity of policies related to agriculture, fisheries and aquaculture in Africa and the Asia-Pacific, respectively.

Youth policies and their approach to youth livelihood development

A common theme across youth policies and strategies is the emphasis given to youth for their potential to contribute to their countries' futures, through calls to be responsible and accountable citizens, as well as active participants in decision-making and governance processes of the country. In the Asia-Pacific, for example, the Draft National Youth Policy (2017) of Bangladesh suggests enabling youth to "play an active role in every sphere of national life," while the National Youth Policy (2017–2030) of Solomon Islands refers to youth as "nation builders" and aims to "foster genuine participation of and partnership with young people in all aspects of national and provincial development." The Draft National Youth Policy (2017) of Bangladesh, the National Youth Policy (2017–2030) of Solomon Islands, and the National Policy on Youth Development (2011) of Cambodia additionally provide some form of a role for youth as stewards of the environment or of sustainable development of the country.

From the perspective of Africa, the African Youth Charter (2006), which sets the framework for policymakers in member states to mainstream youth in all development policies and programs, calls for enhanced involvement of youth in the development agenda of Africa, including youth participation in decision-making processes. Specific to the focal countries, the Second National Youth Policy (2009) of Nigeria, the National Youth Policy (2015) of Zambia, and the National Youth Development Policy (2007) of Tanzania consider youth as future leaders and emphasize the significance of their participation and involvement in national development.

Anyidoho et al. (2012b), Ayele et al. (2017) and White (2012) discuss how such a positioning of youth being integral to a country's development through framings of "nation builders" (Anyidoho et al. 2012b), "human capital" (White 2012) and "agents of change" (Anyidoho et al. 2012b) is a frequent theme across youth policies. These authors, however, consider this approach paternalistic, where a country's youth are imposed with an external vision of how their needs and potential should be met (Anyidoho et al. 2012b; Sumberg et al. 2012; White 2012).

White (2012) further discussed how the realities of the lives of youth are often far removed from their depictions in policies as a social group in transition, with most youth instead occupied with developing their own cultures and identities, and finding successes as youth. This disconnect could be further exacerbated by the fact that youth rarely participate in any meaningful manner in most policymaking processes (Anyidoho et al. 2012b). This also reflects broader constraints youth face in impacting collective decision-making amid gerontocratic systems (White 2012).

In parallel to discussions of youth as human capital runs the theme of youth unemployment as a significant concern to be addressed, if they are to reach their potential as the country's future leaders as discussed by Anyidoho et al. 2012b. The need to create employment or promote employment opportunities for youth features heavily in the youth policies and strategies of all the focal countries. This is expected to be achieved through two main approaches: (1) enabling youth to fill employment opportunities that the market offers and (2) supporting youth to become entrepreneurs. These objectives are to be met through education systems, including ICT education, as well as different kinds of vocational and life skills. The quality of the employment opportunities is not considered explicitly in most of the policies, except for the Draft National Youth Policy (2017) of Bangladesh and the Second National Youth Policy (2009) of Nigeria, which call for the employment to be "decent" with fair wages and safe workplaces.

The institutional arrangements put in place for youth development, however, are not always in congruence with such framings of youth around nation building and employment challenges. Among the diverse ministries that house youth policies in the focal countries, those that have the joint mandate of youth and sports are the most numerous. This indicates a tendency in many countries to associate youth with activities synonymous with being children/students/young, such as play or sports, in the eyes of policymakers, more so than with employment. Exceptions to this include Tanzania, with a Ministry of Labor, Employment and Youth Development.

Country/regional organization	Policy/strategy/other	Responsible institutions	Focus on livelihood development for youth	Focus on SSF/aquaculture/ agriculture as a source of livelihoods for youth	Reference
Egypt	NA	NA	NA	NA	
Nigeria	Second National Youth Policy (2009)	Federal Ministry of Youth Development	Promotes the provision of a wide range of vocational, flexible employment opportunities, decent working conditions and life skills to help youth find and maintain gainful employment and sustainable livelihoods through self-employment creation, vocational training and apprenticeships, and others.	Promotes the involvement and full participation of youth in the agriculture sector by <ul style="list-style-type: none"> providing the necessary inputs, such as technology and finance; supporting the teaching of the science of agriculture at all levels of the educational system; disseminating knowledge on agricultural techniques and processes, and encouraging research on the agriculture sector. 	Federal Ministry of Youth Development (2009)
Tanzania	National Youth Development Policy (2007)	Ministry of Labour, Employment and Youth Development	<ul style="list-style-type: none"> Creates an integrated employment-oriented development framework in the key areas of the economy, such as agriculture and other sectors Supports youth to acquire skills and competencies for employment. 	Creating a conducive environment for youth <ul style="list-style-type: none"> to settle in rural areas and participate effectively in agriculture and other livelihood activities, through improvements in social services and infrastructure, and promotion of rural development; to develop the culture of entrepreneurship and support the development of enterprises. 	Ministry of Labour, Employment and Youth Development (2007)
Zambia	National Youth Policy (2015)	Ministry of Youth and Sport	Aims to promote youth employment and entrepreneurship development through enhancing self-employment opportunities, promoting entrepreneurial education, and the expansion of subsectors that have a relatively high employment multiplier.	No mention of specific target sectors.	Ministry of Youth and Sport (2015)
African Union	African Youth Charter (2006)	African Union Commission	Prescribes member states to <ul style="list-style-type: none"> ensure the availability of accurate data on youth employment, unemployment and underemployment; define clear programs to address unemployment; develop a cross-sectoral, comprehensive and coherent national youth policy. 	No mention of specific target sectors.	AUC (2006)

Notes

¹ Egypt has no national youth policy yet. The Egypt Human Development Report 2010 (available at hdr.undp.org/sites/default/files/reports/243/egypt_2010_en.pdf) outlines a proposed National Policy for Youth in the country, developed in 2009 by the National Youth Council. However, there is no indication that a national youth policy was adopted. A 2010 youth policy briefing is available at www.youthpolicy.org/factsheets/country/egypt/ (accessed on June 26, 2019). Institutionally, youth development comes under the purview of the Ministry of Youth and Sports (www.emys.gov.eg/en, accessed on November 15, 2019).

Table 2. Youth policies and the approach to youth livelihood development in Africa.

Country/regional organization	Policy/strategy/other	Responsible institutions	Focus on livelihood development for youth	Focus on SSF/aquaculture/ agriculture as a source of livelihoods for youth	Reference
Bangladesh	National Youth Policy 2017 (Draft)	Ministry of Youth and Sports	<ul style="list-style-type: none"> Improved opportunities for education, including ICT literacy Provision of vocational training and trade-based training, keeping in line with market needs Provide youth with “decent” employment opportunities (fair wages, safe workplaces) Youth entrepreneurship training and support Encourage youth participation in combating climate change and other processes of environmental management. 	Provide incentives for youth to engage in environmentally sustainable agriculture, industrialization and green technology.	Ministry of Youth and Sports (2017)
Cambodia	National Policy on Youth Development (2011)	Ministry of Education, Youth and Sport	<ul style="list-style-type: none"> Support improved access to education and vocational training for youth Promotion of life skills that better enable youth to meet labor market demands Promotion of youth entrepreneurship training and opportunities for entrepreneurship Promotion of gender equality Encourage youth participation in sustainable development and environmental conservation 	No mention of specific target sectors in terms of youth livelihoods; dissemination of agricultural information in schools mentioned.	Ministry of Education, Youth and Sport (2011)
Myanmar	Youth Policy, the Republic of the Union of Myanmar (2017)	Ministry of Social Welfare, Relief and Resettlement	<ul style="list-style-type: none"> Creation of employment opportunities to meet the skills and qualifications possessed by youth Improved access to education for youth Increased capacity of youth to access market employment opportunities through life skills and vocational training Support for youth entrepreneurship. 	No mention of specific target sectors in terms of youth livelihoods.	Ministry of Social Welfare, Relief and Resettlement (2017)
Solomon Islands	National Youth Policy (2017–2030)	Ministry of Women, Youth, Children and Family Affairs	<ul style="list-style-type: none"> Improve youth education and empowerment while developing the education system at all levels Improved access to technical and vocational education and training (TVET) and skills, as well as entrepreneurial skills By 2030, at least 75% of youth who are not in educational institutions are to have employment through formal or informal opportunities, entrepreneurships and other opportunities Youth to participate better in leadership and governance mechanisms. 	<ul style="list-style-type: none"> Youth-led programs that maximize the opportunities afforded by the “blue and green economies” Economic opportunities in rural areas through commodity chains linked to local and international markets, to reduce the need for unsustainable rural-urban migration Support entrepreneurship opportunities in agriculture and fisheries, among other sectors. 	Ministry of Women, Youth, Children and Family Affairs (2017)
ASEAN	First ASEAN Youth Development Index (2017)	ASEAN and United Nations Population Fund (UNFPA)	The four domains considered are education, employment and opportunity, health and well-being, and participation and engagement. Youth not in employment, education or training and the youth unemployment ratio are two of the indices considered.	No mention of specific target sectors in terms of youth livelihoods.	ASEAN and UNFPA (2017)

Table 3. Youth policies and the approach to youth livelihood development in the Asia-Pacific.

Country/regional organization	Policy/strategy/other	Responsible institution	Approach to youth inclusion in sector development		Reference
			Sector	Approach	
Egypt	Sustainable Agricultural Development Strategy Towards 2030 (2009)	Ministry of Agriculture and Land Reclamation	Agriculture	<ul style="list-style-type: none"> Aims to create job opportunities for the younger generation in agricultural and related activities, through (i) reclamation of new areas, (ii) improvement of the irrigation system in the old areas, (iii) adoption of labor-intensive technologies, and (iv) expansion of agricultural support activities in the fields of producing and marketing agricultural inputs and agro-industries Raise awareness among the wide base of rural inhabitants, particularly youth, of the scientific solutions that would support development efforts 	Ministry of Agriculture and Land Reclamation (2009)
Nigeria	The Agriculture Promotion Policy (2016–2020)	Federal Ministry of Agriculture and Rural Development	Agriculture	<ul style="list-style-type: none"> Has a section on youth and women Aims to maximize the contribution made by women and youth to agricultural production, and eliminate discriminatory practices in the employment of women and youth in the sector by (i) developing and launching entrepreneurship platforms to support entry into the agribusiness economy and facilitate dialogue, and (ii) expanding capacity building of women and youth for entrepreneurship No mention of specific target subsectors. 	Federal Ministry of Agriculture and Rural Development (2016)
Tanzania	National Agriculture Policy 2013	Ministry of Agriculture, Food Security and Cooperatives	Agriculture Livestock and fisheries	<ul style="list-style-type: none"> Both policies have sections on youth Both policies aim to create an enabling environment to attract youth in agricultural production/fisheries and aquaculture developmental activities through (i) increasing access to productive resources, (ii) creating a conducive environment for youth to settle in rural areas, (iii) providing agribusiness skills, (iv) promoting a culture of entrepreneurship, and (v) promoting equitable access to resources 	Ministry of Agriculture, Food Security and Cooperatives (2013)
	National Fisheries Policy of 2015	Ministry of Livestock and Fisheries Development		<ul style="list-style-type: none"> The National Fisheries Policy prescribes the promotion of a curriculum that will enhance appropriate technologies within the sector. 	Ministry of Livestock and Fisheries Development (2015)
Zambia	Second National Agricultural Policy (2016)	Ministry of Agriculture and Ministry of Fisheries and Livestock	Agriculture (including fisheries and aquaculture)	<ul style="list-style-type: none"> Youth are mentioned along with women The policy objective toward youth includes promoting (i) their participation in the agriculture sector, (ii) their access to productive resources and other agricultural services, and (iii) the development of appropriate agricultural technologies No mention of specific target subsectors. 	Ministry of Agriculture and Ministry of Fisheries and Livestock (2016)
African Union	Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa (2014)	African Union, New Partnership for Africa's Development (NEPAD)	Fisheries, aquaculture	<ul style="list-style-type: none"> Encourage member states to collect gender-disaggregated sector data by age and occupational categories to be analyzed in a meaningful way to effectively inform policy, planning and design of activities and interventions Equip youth with appropriate skills through education and empowerment Enhance youth participation in decision-making. Adopt value chain analysis for improving youth productivity, working conditions and unpaid work Promote intersectoral approaches and partnerships for empowering youth. 	AUC-NEPAD Agency (2014)

Table 4. Policies related to agriculture, fisheries and aquaculture, and the approach to youth inclusion in Africa.

Country/regional organization	Policy/strategy/other	Responsible institution	Approach to youth inclusion in sector development	Reference	
Bangladesh	National Fisheries Policy (1998)	Ministry of Fisheries and Livestock	Fisheries, aquaculture	<ul style="list-style-type: none"> Participation in the sector encouraged as a means of employment for unemployed youth, through leasing of water bodies, training in fish culture and financial assistance Vocational training on fish culture for school and college students. 	Ministry of Fisheries and Livestock (1998)
	National Agriculture Policy (1999)	Ministry of Agriculture	Agriculture	No mention of “youth” or “young people.”	Ministry of Agriculture (1999)
Cambodia	The Strategic Planning Framework for Fisheries (2010–2019)	Ministry of Agriculture, Forestry and Fisheries, Fisheries Administration	Fisheries, aquaculture	No mention of “youth” or “young people.”	Fisheries Administration of the Ministry of Agriculture, Forestry and Fisheries (2009)
	The Strategic Planning Framework for Fisheries (updated for 2015–2024)	Ministry of Agriculture, Forestry and Fisheries, Fisheries Administration			Fisheries Administration of the Ministry of Agriculture, Forestry and Fisheries (2015)
	National Strategic Development Plan (2014–2018)	Royal Government of Cambodia	Agriculture, fisheries, aquaculture	No mention of specific target sectors in terms of youth livelihoods. Tackling youth unemployment and creation of employment opportunities for youth, and improving education and other skills for employment mentioned as crosscutting issues.	Royal Government of Cambodia (2014)
Myanmar	Myanmar Agriculture Development Strategy and Investment Plan (2018–19 ~ 2022–23)	Ministry of Agriculture, Livestock and Irrigation	Agriculture, fisheries, aquaculture	<ul style="list-style-type: none"> Youth mentioned along with women and other “disadvantaged groups” Promotion of agro-entrepreneurship among such groups Youth out-migration mentioned as a phenomenon with complex impacts on agricultural development. 	Ministry of Agriculture, Livestock and Irrigation (2018)
Solomon Islands	National Development Strategy (2016–2035)	Ministry of Development Planning and Aid Coordination	Agriculture, fisheries, aquaculture	No mention of specific target sectors in terms of youth livelihoods. However, the need to reduce youth unemployment, and improve education and employment capacity of youth mentioned as a crosscutting issue.	Ministry of Development Planning and Coordination (2016)
ASEAN	ASEAN Regional Guidelines on Food Security and Nutrition Policy (2017)	ASEAN	Agriculture	Youth considered along with other “vulnerable groups” to be targeted for participation in agriculture, access to resources, and decent employment.	ASEAN (2017)

Table 5. Policies related to agriculture, fisheries and aquaculture, and the approach to youth inclusion in the Asia-Pacific.

With regard to youth employment in agriculture, the youth policies of four of the seven focal countries (Bangladesh, Solomon Islands, Nigeria and Tanzania) make some mention of the sector as a source of livelihoods for youth. Fisheries as a source of youth livelihoods is mentioned in the case of Solomon Islands. The youth policies of Myanmar, Cambodia and Zambia do not mention specific sectors targeted to meet the employment-related objectives of the policy. Among some of the policies that mention agriculture or fisheries as a source of employment for youth too, youth entrepreneurship receives heavy focus as a means of expanding this engagement.

Ayele et al. (2017) discussed how expanding the entrepreneurship capabilities of young people as a solution to tackling high levels of youth unemployment features as an approach that policymakers regularly adopted. However, this heavy focus on entrepreneurship has also been criticized. White (2012) argued that such entrepreneurship development programs have too often been promoted as an alternative to implementing solutions at the more structural level to tackle high levels of unemployment. In addition, the concept of entrepreneurship is considered to be so widely used that all self-employment and income-generating activities are increasingly being referred to as entrepreneurial (Ayele et al. 2017). In this context, Ayele et al. (2017) cited a review by the ILO, which finds that there is insufficient evidence yet to claim that self-employment schemes implemented up to now have succeeded in creating new jobs for young people. White (2012) attributed this lack of success to the fact that beyond entrepreneurial support, young people require specialized technical skills and work experience to successfully start new businesses, which many would not possess.

Sectoral policies and considerations of youth inclusion

Not all sectoral policies on agriculture, fisheries and aquaculture make explicit mention of youth as a target category. Such a focus is more apparent in Africa, where the creation of enabling conditions for youth involvement in agriculture features strongly in several of the policies and strategies of the four focal countries (Egypt, Nigeria, Tanzania and Zambia). Mirroring narratives in youth policies, in agriculture

policies too, entrepreneurship emerges as a popular theme, using agro-entrepreneurship approaches to engage youth in the sector.

Among sectoral policies that mention youth as a specific category, a recurrent theme is the grouping of youth together with women and other groups that are considered “vulnerable,” who need support to overcome barriers to engagement. In certain cases, this grouping is institutional, for example, in Solomon Islands, where youth development is overseen by the Ministry of Women, Youth, Children and Family Affairs.

Considering a group as being vulnerable or marginal and in need of empowerment can however lead to generalizations of the characteristics and needs of the entire group (Anyidoho et al. 2012b). Te Lintelo (2012) argued that such treatment of youth as individuals without other intersectional identities, and with different forms of engagement in agriculture, SSF and aquaculture, can increase the risk of policies that assume a single approach is sufficient to meet the needs of all youth.

A second frequent theme linking youth with agriculture, fisheries and aquaculture is that of increasing youth disengagement with the sectors and migration away from rural areas, with the issue receiving focus in the National Youth Development Policy (2007) of Tanzania, the Myanmar Agriculture Development Strategy and Investment Plan (2018–19 ~ 2022–23) and the National Youth Policy (2017–2030) of Solomon Islands. The youth policy of Tanzania calls for enabling youth to settle in rural areas and to participate effectively in agriculture, while the youth policy of Solomon Islands outlines the need to create economic opportunities in rural areas to curb unsustainable rural-urban migration.

Such an approach does not sufficiently take into account the aspirations of many rural youth to move away from agriculture, SSF and aquaculture and, whether realized or not, that this trend is likely to have an impact on these sectors as a whole. Proctor and Lucchesi (2012) highlighted the importance of ensuring that policies for agriculture be set within contexts of national transformations and demographic changes in the sector. Furthermore, as Sugden (2018) suggested, migration can support increasing the

well-being of rural youth by providing them with opportunities to explore lifestyles not available to previous generations, and generating new income streams. Anyidoho et al. (2012b) argued that what is advantageous for the development of the agri-food sector (young people continuing to remain

engaged in agriculture) and what is beneficial for rural youth may not necessarily be in alignment. The authors highlighted the need to resolve this fundamental tension before policies related to either youth or the agriculture sector can achieve their objectives.



Young women selling farmed fish, Egypt.

Chapter 5: Current status of knowledge and trends

Key findings

Overall, the topic of youth engagement in aquaculture production, SSF and value chains is understudied, and appears to be even more so than the agriculture sector. This lack of information appears to be more evident in the case of the Asia-Pacific region. The lack of studies is also more acute for young women.

While in certain contexts, the participation of young women and men as a significant component of the SSF and aquaculture labor force has been documented, it appears that in many contexts youth might be moving away from these sectors. This appears to be particularly true of the SSF sector, which in many contexts is not perceived favorably as a livelihood option. Aquaculture might be viewed as a more “modern” option, for instance, in certain contexts in Africa.

Youth who participate in the SSF and aquaculture value chains appear to follow broader patterns of gendered divisions of labor. Young men are more likely to be involved in fish production and young women in other aspects of the value chains, such as processing and trading. Young people might also engage in these sectors (particularly SSF) until they find an opportunity to diversify out.

Youth involvement as an understudied area

By and large, the topic of youth engagement in aquaculture production, small-scale fisheries and value chains remains an understudied area (Weeratunge et al. 2010; FAO 2016a), and appears to be even more so than the agriculture sector.

Statistics related to fisheries and aquaculture have so far not been successful in capturing information that is specific to the involvement of youth and children. The sector’s fragmented nature and low institutional capacity for data collection are possible reasons for this omission. Data on the participation of young women and girls is even more sparse as, in many cases, fish processing is carried out within the households (FAO 2016a). This lack of knowledge is further reflected in the literature reviews conducted for this study and in the dearth of studies available on youth involvement in aquaculture production, SSF and value chains, particularly for the Asia-Pacific.

According to Weeratunge et al. (2010), data on opportunities and constraints in terms of employment in the sector is notably absent, as is research on social exclusion in community-based fisheries management for groups such as youth. More specifically, this includes information on

how access to nutrition, health, education and social safety nets within the sector influences participation and, once engaged, how factors such as access to credit, differing scales of enterprise, and gender disparities in investment in technologies can influence the benefits derived from this participation (Weeratunge et al. 2010).

The lack of recognition of youth involvement in SSF, aquaculture and value chains as an area of concern might be changing. In The State of World Fisheries and Aquaculture series, published by the Food and Agriculture Organization of the United Nations (FAO) Fisheries and Aquaculture Department from 2008 to 2018, there is evidence of increased attention being given to this issue. References to youth and/or young people are minimal in the publications from 2008 to 2014, but the 2016 and 2018 reports make a number of references to incorporating youth-related considerations (FAO 2008, 2010, 2012, 2014a, 2016b, 2018b).

Current status of youth participation

According to the literature available on the topic, youth in industrialized countries are largely moving away from marine capture fisheries (FAO 2008). Difficult and often dangerous working conditions, low wages and uncertainty about

the sustainability of fishstocks have been posited as reasons for this trend (FAO 2008). In South Korea and Japan, for example, capture fisheries is considered an aging sector (Li 2012; Tietze 2016).

While equivalent information does not appear to be available regarding youth from the Global South literature, the majority of the key informants were of the opinion that in the focal countries in Africa and the Asia-Pacific, participation of young people, especially in SSF, appears to be on the decline. Reflecting trends in the agriculture sector, according to the key informants, many young people from families or communities involved in aquaculture and SSF tend to aspire to migrate to the cities, which is seen as a more attractive option in terms of employment opportunities.

In certain contexts, the participation of young women and men as an important and active part of the labor force has also been documented. This is apparent from the age compositions of the fishers in the following studies, even if these do not explicitly refer to “young” fishers.

In a global survey of aquaculture farms, Hishamunda et al. (2014) found that the majority of workers were between the ages of 20 and 39. A study of the predominantly female workers in shrimp processing factories in Bangladesh found that 60% of the workers from the Chittagong region were between 18 and 25 years old, and 57% of those from the Khulna region were between 26 and 40 (Nuruzzaman et al. 2014). A project introducing carp (a small indigenous fish species) prawn polyculture technology to small-scale women farmers in the Terai region of Nepal found that 58% of the women participating were between the ages of 20 and 39 (Rai et al. 2014). Similarly, a case study of the largely homestead-based oyster aquaculture processing industry in Japan suggests that most of the employed young people of Chinese origin were women about 20 years of age (Soejima 2014). With regard to SSF, among the artisanal/invertebrate fishery activities in the Al Wusta Governorate of Oman (primarily carried out by women), the largest age group (34%) consisted of women between 21 and 30 years old (Al Rashdi and Mclean 2014). Among fisheries dominated by men, a study of an artisanal fishing community in the southern coast of Sri Lanka found that 31% of fishers were 15 to 30 years of age (Venkatachalam et al. 2010).

We recognize that some of these studies are from more specialized or niche sectors, and hence may not be indicative of the fisheries sector as a whole. Nevertheless, certain tentative observations can be made from existing studies that cover the involvement of youth in SSF and aquaculture.

1. These studies from the SSF and aquaculture sectors reiterate the ambiguity discussed in Chapter 2 surrounding what constitutes the terms “youth” and “young” people. In some studies, the terms are not defined at all (Rahman 2005; Goswami and Samajdar 2011; Sruthi et al. 2016; Tietze 2016; FAO 2008, 2012, 2014a, 2016b). In studies where they are defined, individuals between 15 and 30 years old (Venkatachalam et al. 2010), between 15 and 24 (FAO 2016a), close to 20 (Soejima 2014), and between 18 and 25 (Nuruzzaman et al. 2014) fall into the categories of young and youth.
2. Considering the discussion in Chapter 2 that youth is one among many social identities borne by individuals, it appears that young women and men tend to occupy certain niches while working in SSF and aquaculture, reflecting broader gendered patterns of division of labor. According to Weeratunge et al. (2010), in capture fisheries value chains, women play a key role in activities such as gleaning, nearshore fishing, processing, trading and other pre- and postharvesting work, while men largely dominate fish production. Similarly, while the limited number of studies discussed above makes it impossible to reach any definitive conclusions, it would appear that (i) younger women are more likely to work in other aspects of SSF and aquaculture value chains, such as processing and also traditional or artisanal fishing activities, and (ii) young men are more likely to be involved in fish production. This is reflected in the findings from the KIs. In the floodplains of Myanmar, men (including young men) are more likely to be involved in fishing and selling their catch to usually female-run enterprises, which then process and sell the fish. In Solomon Islands, women (including young women) are more active in reef cleaning, collecting shells and other livelihood activities, such as crop cultivation, while the men engage in fishing activities. In Egypt, although men dominate fish production, women (including young women) play an important role in the value chains, especially in retailing.

In certain contexts, young people might engage in the SSF sector until they find opportunities to diversify or move out. A survey of SSF communities in the Philippines found that age, in tandem with the ability to find alternative livelihoods, influenced the intensity of participation in, and dependence on, fisheries. Younger fishers engaged in fishing more frequently than their older counterparts, who were more successful in finding other types of employment, including driving and boat operating for fishery operations (Tietze 2016).

Youth perceptions of aquaculture and small-scale fisheries

According to the majority of the KIIs, there was general agreement that involvement in aquaculture and SSF is not seen as a first choice of employment for most youth and is not considered a “modern” option for employment. This is particularly the case for SSF, where involvement is usually considered a last resort. A few of the interviewees felt that young people might be more receptive to practicing SSF and aquaculture, from a “modern, business” lens.

The key informants brought up examples from the Asia-Pacific of different forms of perceptions of the SSF and aquaculture sectors as a source of youth livelihoods. In Cambodia, youth view livelihoods in SSF as a last resort because of the hard work and poor pay involved. In Bangladesh, where many households that are able to own land also have a pond in the vicinity, families might opt for these ponds to be leased to outsiders for aquaculture, preferring that the youth of the household do not take over the running of the ponds. Examples of more positive perceptions include the value addition of fish in certain SSF contexts in Myanmar, where this is considered a lucrative activity and an attractive business for small and medium-sized enterprises (SMEs). It must be noted, however, that the ecological sustainability of this activity and its potential as a source of employment in the face of decreasing yield is questionable. In Solomon Islands, pelagic fishing using fish aggregating devices (FADs) is viewed as a viable livelihood option because of the relative profitability of this technique.

Reflecting trends in the Asia-Pacific, in Africa too, youth do not show much affinity for SSF, according to the key informants. Similar to agriculture, the

SSF sector is generally associated with poverty, backbreaking labor and insufficient financial gains. In Nigeria, for example, the low wages paid to workers in fish farms do not make the sector a lucrative prospect for youth, with the majority seeing farm jobs as a symbol of poverty. With attention shifting away from agriculture as a major source of national revenue following the discovery of oil in the country, agriculture has lost its popularity among youth, who instead prefer the “neat” white collar job options (Adelodun 2015).

Youth in Africa appear to be relatively more attracted to aquaculture than SSF. According to the KIIs, a key reason for this is the importance given to aquaculture by related stakeholders, such as the government, NGOs, research/academic institutions and the private sector, as a source of employment for youth. These stakeholders also work on improving the perception of aquaculture as a profitable and empowering livelihood activity. Within the SSF sector, youth perceive the trading segment more positively, according to the key informants. In Zambia, for instance, trading is considered attractive as it is seen as easier and more lucrative than catching and processing fish.

Chapter 6: Challenges and opportunities

Youth involved in or seeking to get involved in aquaculture, SSF and value chains face a number of constraints as well as a few and potentially emerging opportunities. With the understanding that many of these challenges and opportunities might not be unique to youth, this section attempts to look at how these might impact youth differently and how their impact is felt by different youth groups. Many of the opportunities and

constraints identified are also constantly evolving, and with them potentially the nature of youth engagement in SSF and aquaculture. We note that these findings are based on existing knowledge sourced from the literature reviews and KIs. Further work is required in terms of expanding the discussions around these topics and unpacking them in more nuance and different contexts.



Photo credit: Mohammad Mahabubul Rahman / WorldFish

Challenges

Key findings

Youth who are engaged in, or looking to enter, the SSF and aquaculture sectors and value chains face a number of constraints, which include the following:

- The challenges of access: Youth are constrained in accessing land, financial services and other resources, and decision-making circles amid systems dominated by gerontocracy.
 - Access to land: As with the agriculture sector, accessing land for aquaculture production is often difficult for young people. Even where access rights are made available, youth might face difficulties navigating power structures in realizing these rights. In SSF, the issue of access also extends to rights-based fisheries in contexts of the privatization of common-pool resources. Both the challenge of access and the realization of rights are more acute for young women. With youth in many rural areas often working in both agriculture and SSF as part of diversified livelihood portfolios, changing trends in youth involvement in agriculture can also have consequences for their involvement in SSF.
 - Access to financial capital: Accessing financial capital is an important support service for both SSF and aquaculture. However, formal means of borrowing have so far not been receptive to the unique circumstances of youth, such as possessing limited collateral, while informal methods can be associated with exploitative interest rates and credit terms. Other constraints to access include the limited participation of young people in savings and credit cooperatives. An associated challenge for many youth is limited financial literacy skills and experience.
 - Access to decision-making: In communities where gerontocracy dominates decision-making, young people, not surprisingly, find it challenging to have a voice in influencing decisions, including those related to fisheries and natural resource management. On a larger scale, SSF organizations usually find themselves with limited potential to influence policymaking and government decisions, a challenge further intensified for groups such as women and youth.
- Limited knowledge and experience: Youth could also possess limited knowledge and skills, both as a consequence of being young and not having had sufficient time to learn, and because of constraints to access. As with the agriculture sector, formal education systems may not support livelihoods in SSF or aquaculture. Furthermore, an increased focus on getting a formal education as a pathway to opportunities outside the SSF sector means that youth are potentially losing familiarity with other forms of knowledge and skills related to working in SSF, including ecological and traditional forms.
- Ecosystem productivity: Young fishers increasingly have to interact with natural systems that are subjected to intensifying fishing effort, increasing climate variability and other threats to ecological productivity. There has been some documentation of “shifting baseline syndromes,” where fishers of different ages perceive the environment differently, with younger fishers viewing the altered (less productive) state of an ecosystem as “normal.” It is possible that varying and declining ecological productivity is an additional factor in driving youth to pursue other forms of livelihoods, a trend that is particularly conspicuous in SSF.
- The nature of the work, low social status and social stigma: Livelihoods in SSF and aquaculture are regularly associated with seasonality, harsh physical labor and low earnings. In tandem with these factors, these sectors, particularly SSF, can be associated with low social status and poverty, and even social stigma in certain contexts. This makes these sectors, especially SSF, unattractive, especially for youth who might be able to move out into what is perceived as more attractive employment opportunities.
- Exploitative and discriminatory working conditions: Youth can be vulnerable to exploitation in SSF and aquaculture. This includes the practice of child labor, as well as the employment of youth under precarious, low-paying and undignified working environments. Certain points of the value chains, such as retailing, see the participation of a larger number of women, and other points, such as processing in factory settings, especially young women. These women often face vulnerabilities related to discrimination in work and pay and sometimes sexual harassment and violence.

The challenge of access

Youth are constrained in accessing land, financial services and other resources, and decision-making circles amid systems dominated by gerontocracy.

Access to land

As with the agriculture sector, accessing land for aquaculture production is often difficult for young people. Even where access rights are made available, youth might face difficulties navigating power structures in realizing these rights. In SSF, the issue of access also extends to rights-based fisheries in contexts of the privatization of common-pool resources. Both the challenge of access and the realization of rights are more acute for young women. With youth in many rural areas often working in both agriculture and SSF as part of diversified livelihood portfolios, changing trends in youth involvement in agriculture can also have consequences for their involvement in SSF.

In both Africa and the Asia-Pacific, youth are constrained in accessing land for aquaculture production. As in the agriculture sector, gerontocratic systems and inheritance as the main mode of transfer of land mean that youth are generally not owners of land and do not play a principal role in its management. According to key informants from Zambia, one of the reasons for the limited participation of youth is because adults, especially older men, have more control

over resources under gerontocratic systems. Young people do not own land, unless they inherit it from their parents. Even in such systems, large families and small portions of land mean that not all young men in a given household have the opportunity to inherit land. While living with their parents, young people might work on their parents' land, often on maintenance and feeding tasks. Youth in Bangladesh and Myanmar face similar constraints in relation to land access and inheritance, according to the key informants. While youth may be involved in their families' aquaculture businesses prior to becoming adults, they are more likely to be considered "helpers" than co-managers or decision-makers.

This challenge is further magnified for women. In Zambia, according to the key informants, young women do not inherit land, except in matrilineal societies. Similarly, a study by Odoemelam et al. (2014) on the method of land inheritance showed that in Abia State, Nigeria, the main means for women to acquire land was through matrilineal ties and purchases, while other forms of acquisition, such as renting, borrowing and inheritance, were minimal. In the Asia-Pacific, too, the key informants felt that young women in many communities engaging in aquaculture face additional cultural restrictions in inheriting land or accessing inherited land. Even in jointly managed ventures, their ability to influence decisions on how the land is managed is often curtailed.

Box 4. Power systems in impeding access to resources for youth.

In the early 1990s, the Government of Bangladesh devised a program whereby small water bodies were leased to youth cooperatives for aquaculture production. This was a government initiative through the National Fisheries Policy (1998) to facilitate land rights for youth to engage in aquaculture production. The program also aimed to address high levels of youth unemployment. Small water bodies up to 20 acres (nearly 8 ha) were transferred to the purview of the Ministry of Youth and Sports to be leased to youth cooperatives (Khan 2004; Valbo-Jørgensen and Thompson 2007).

The program did not have the anticipated impact on youth employment. Youth wings affiliated with political parties, together with those who were already regular lessees, applied jointly for the jalmohal leases. "Fake youth societies" were also created to bid for leases. Once the leases were obtained, the fishing rights were subleased to other hired fishers to manage and fish from these water bodies. This resulted in young people, the target beneficiaries of the program, being obstructed from having any form of meaningful access to the leases (Government of the Peoples' Republic of Bangladesh, Ministry of Fisheries and Livestock 1998; Khan 2004; Khan et al. 2016). The ecological sustainability of the leasing program has also been questioned, as it resulted in the conversion of fish refuges, critical for maintaining fish biodiversity during the dry season, to aquaculture systems. (Khan 2004; Valbo-Jørgensen and Thompson 2007).

Even where formalized systems are put in place to increase access to land for youth, entrenched power structures and political systems can determine their access to resources. This is illustrated further in the case study presented in Box 4.

Incompatible land tenure systems can serve as an additional deterrent to those looking to enter the aquaculture sector, including youth. For example, a national study in Nigeria by Adesugba and Mavrotas (2016) indicated that apart from the limited use of agricultural technology, barriers to obtaining agricultural finance and a poor agribusiness environment, the other major constraint for youth in Nigeria to participate in the agriculture and aquaculture sectors was unfavorable land tenure systems. In Myanmar, rigid land tenure systems pose an additional barrier for entry into aquaculture production, according to the key informants. The government assigns land for specific purposes, with the conversion of land allocated for paddy being strictly regulated. Converting paddy lands to ponds involves long bureaucratic processes (Belton et al. 2015), potentially discouraging new entrants such as youth to the sector. The key informants felt, however, that some of the regulations on land use could be revised in the future, with the Department of Fisheries planning to issue an edict to allow for the regularization of such ponds.

Changing patterns of ownership and management of land in the agriculture sector can also have spillover effects on youth engagement in the SSF sector. Béné and Friend (2011) discussed how a significant proportion of rural households in the Global South that live close to water bodies usually tend to engage in some form of fishery-related activity, as part of diversified livelihood strategies that also include farming, livestock rearing, wage labor and migration. Such SSF encompass different degrees of involvement in fishing—from fishing as a primary source of income to fishing as a supplementary source of income to fishing for nutritional diversity in the households (Béné and Friend 2011). Young people might, therefore, engage in SSF to some degree while working in agriculture as producers and wage laborers. Issues related to land access, ownership and fragmentation, and other trends in the agriculture sector, such as mechanization, that impact youth participation in agriculture and out-migration from the sector (Leavy and Smith 2010; Leavy and

Hossain 2014; Deotti and Estruch 2016) could also potentially have important implications for youth participation in SSF in these areas.

In the case of SSF, property rights also include rights-based fisheries. The question of access has been discussed in the context of arrangements to prevent overfishing in capture fisheries, such as individual transferable quotas and limited entry licensing. It is felt that such privatization of common-pool resources could act in favor of more powerful fisheries stakeholders, preventing young fishers from accessing the resource and entering fisheries at a later time (FAO 2016c). The literature on youth access to land rights could serve as a useful starting point for future studies on access to property rights in SSF, as the two topics share certain common themes, such as gerontocracy and power structures as important factors in constraining access for young fishers.

Access to financial capital

Accessing financial capital is an important support service for both SSF and aquaculture. However, formal means of borrowing have so far not been receptive to the unique circumstances of youth, such as possessing limited collateral, while informal methods can be associated with exploitative interest rates and credit terms. Other constraints to access include the limited participation of young people in savings and credit cooperatives. An associated challenge for many youth is limited financial literacy skills and experience.

The key informants agreed that it is difficult for youth to raise the necessary funds needed to start and sustain ventures in aquaculture and SSF. This could be a result of general constraints to accessing finance, particularly for new entrants to the sector, as well as those faced by youth specifically. In Zambia, except for facilities provided through the government-supported Citizens Economic Empowerment Commission or those trialed by development organizations, such as the Swedish International Development Cooperation Agency and the FAO-ILO microfinance program, other credit sources are limited in number (Genschick et al. 2017). In Solomon Islands, where some communities followed a subsistence-based (and not cash-based) economy, accessing finance to start SSF businesses can be linked with additional complexities, according to the key informants. For youth specifically, not possessing

physical assets to use as collateral (Adesugba and Mavrotas 2016) is often a key deterrent.

While playing a role in filling the credit gap, informal financing can come with its own set of challenges. In Africa, youth participation and involvement in decision-making in Savings and Credit Cooperatives are low (FAO 2014b). Where favorable financing systems do not exist, those seeking credit, including youth, have to rely on alternative arrangements, such as borrowing from local money lenders and contract farming agreements, often associated with exploitative conditions. For example, in Myanmar, according to the key informants, unaffordable interest rates and other difficulties drive many aquaculture farmers to participate in contract farming with private companies, arrangements that are skewed in the private companies' profitability interests.

Youth might also find themselves constrained by limited knowledge and experience, including limited financial literacy skills and experience. Young people might possess limited skills for business and financial planning, which are required to access credit from formal financial institutions (FAO 2014b). Key informants from the focal countries in Africa felt that youth might have limited experience to convince potential lenders of their capacity to initiate a business. Youth might also have fewer chances to access effective training opportunities, when compared to other individuals in the community (Adelodun 2015). Limited knowledge and experience as constraints that youth face is discussed further in the sections below.

Access to decision-making

In communities where gerontocracy dominates decision-making, young people, not surprisingly, find it challenging to have a voice in influencing decisions, including those related to fisheries and natural resource management. On a larger scale, SSF organizations usually find themselves with limited potential to influence policymaking and government decisions, a challenge further intensified for groups such as women and youth.

Youth are often sidelined in decisions taken not only at the household level, as in the case of land management for aquaculture, but also at the community level. In the Zambian SSF sector, the key informants stated that community-based fishery management committee members

are frequently individuals who have social and economic power (which most youth do not possess), with small-scale youth fishers largely excluded from co-management decision-making processes. Among youth in Solomon Islands, according to the key informants, the challenge of access is often connected to developmental initiatives, frequently those focusing on community-based resource management (CBRM). CBRM is a management system seen across the Pacific Island countries, where resources are owned and managed more at the community and tribal level than at the governmental level. Where CBRM interventions are made through external stakeholders, such as NGOs, the leader of the community, usually an adult male, is typically approached first. Youth are typically not consulted. If they are, it is only in cases where the interventions are specific to them.

In general, SSF organizations find themselves with limited potential to influence policymaking and government decisions. They rarely have strong connections to influential employer and worker representative organizations that could facilitate such influence. This inaccessibility to decision-making processes is further intensified for groups such as women and youth (FAO 2016a).

Limited knowledge and experience

Youth could also possess limited knowledge and skills, both as a consequence of being young and not having had sufficient time to learn, and because of constraints to access. As with the agriculture sector, formal educational systems may not support livelihoods in SSF or aquaculture. Furthermore, an increased focus on getting a formal education as a pathway to opportunities outside the SSF sector means that youth are potentially losing familiarity with other forms of knowledge and skills related to working in SSF, including ecological and traditional forms.

Formal educational systems do not always prepare youth for livelihoods in the SSF and aquaculture sectors. This could be a result of the sectors not being portrayed as promising options for employment, as with the agriculture sector (as discussed in Chapter 3). Where preparatory programs do exist, these may not adequately equip youth with the knowledge and skills required for work in these sectors (Box 5).

Box 5. The need for supportive educational and skill building systems for youth engagement in aquaculture.

According to FAO (2014b), the rapid development of the aquaculture sector in Egypt has created a large number of jobs for farm technicians and skilled laborers—at fish hatcheries, cage farms and intensive pond aquaculture systems, fry collection stations, juvenile production facilities and fish farms. The key informants also indicated that, in addition to this, emerging industries and financial services in support of aquaculture have provided employment opportunities, including for youth. Because of the availability of employment opportunities, many universities in Egypt, such as Kafrelsheikh University, Alexandria University, Suez Canal University and others, offer courses in aquaculture science. Students from these universities also take internship positions, and some are employed as full-time staff at different institutions, such as WorldFish, Abbassa Research Center, large private companies and other institutions. According to key informants, this provides youth with opportunities for (i) gaining practical knowledge, (ii) finding employment and (iii) innovation. For example, the Abbassa Research Center has specific laboratories that provide opportunities for youth in innovation and experimentation.

However, in Zambia, where aquaculture is still a fledgling industry, the youth graduating from technical and vocational education and training schools (TVETs) lack the required skills to be hired as skilled laborers, according to the key informants. A possible reason for this is that the TVETs that provide courses on aquaculture production use outdated curricula to guide training on the topic. Furthermore, the small number of TVETs in the country is inadequate to produce the skilled labor required in the market. According to the key informants, the private sector is therefore obliged to bring skilled labor from other countries, such as the Philippines and South Africa to meet this labor gap.

In the case of traditional and ecological knowledge, it is possible that, in certain contexts at least, youth are losing familiarity with such knowledge systems. For example, in the case of a fishing community in the Philippines, a study by Bucol (2016) found that older fishers felt that young people were less aware of a traditional resource conservation practice to set aside seagrass beds as temporary reserves to be used during seasons when other marine ecosystems became less productive. Similarly, in a study in Guangdong Province in the south of China, Punch and Sugden (2013) demonstrated that the assimilation of traditional livelihood skills and ecological knowledge by children and youth through daily interactions with the environment and by accompanying their parents in SSF activities is declining because of increasing emphasis on getting a formal education. As educational attainment becomes an essential aspiration for families because of broader social and cultural shifts, and as children and youth are encouraged to enroll and remain enrolled in education longer, the amount of time spent on contributing to the livelihood activities of their households diminishes, which leads to a loss in these knowledge and skills. Parents also spent

less time on such intergenerational knowledge provision. While the benefits of obtaining a formal education are indisputable, such a decline in other forms of knowledge and skills could be problematic in the face of the “skills mismatch” phenomenon described in Chapter 3.

With regard to knowledge and experience as constraining factors for youth engagement in SSF and aquaculture, it is important to differentiate between two contexts: (1) where youth being “young” are limited in their knowledge and experience, having not had sufficient time to learn and (2) where youth might find it challenging or are discriminated against in accessing knowledge, such as support services and training programs, because of power asymmetries with older individuals.

Ecosystem productivity

Young fishers increasingly have to interact with natural systems that are subjected to intensifying fishing effort, increasing climate variability and other threats to ecological productivity. There has been some documentation of “shifting baseline syndromes,” where fishers of various ages perceive

the environment differently, with younger fishers viewing the altered (less productive) state of an ecosystem as “normal.” It is possible that varying and declining ecological productivity is an additional factor in driving youth to pursue other forms of livelihoods, a trend that is particularly conspicuous in the SSF sector.

The key informants in the Asia-Pacific agreed that the SSF sector is heavily exploited in most areas. In Cambodia, it is considered largely overexploited and in a state of degradation, and participation in SSF is seen as a last resort of employment for youth. In Nigeria, a study by Adebesein (2011) in Ijebu-ode, Ogun State, and another by Richard and Ogba (2016) in Andoni Local Government Area, Rivers State, indicated that the lowering returns of fish captured from natural water bodies, because of unsustainable fishing practices, such as the use of chemical poison (ichthyotoxic) plants, pollution, encroachment and overexploited natural fishery areas (overfishing), discourages youth participation in SSF. The key informants from Tanzania and Zambia agreed with these findings in the context of their countries.

Among young fishers on the south coast of Sri Lanka, Venkatachalam et al. (2010) found evidence of “shifting baseline syndromes,” where fishers of different ages perceive the environment differently. The altered (less productive) state of an ecosystem is perceived as “normal” by younger fishers, not having interacted with it in any other state. When compared to the younger fishers, older fishers recalled a larger number of days in the past when they had good catches of frigate tuna and other bigger fish. These catches also occurred in shallower waters and closer to the shore, when compared to those of younger fishers. This is in spite of the fact that younger fishers used more improved gear for fishing. Furthermore, the number of sites associated with declined fish catches showed a significant increase with the age of the fishers (Venkatachalam et al. 2010).

An example of fishers moving away from overutilized ecosystems in the Asia-Pacific is the case of women artisanal fishers in Al Wusta Governorate in Oman (Al Rashdi and Mclean 2014). These fishers have traditionally been involved in collecting marine invertebrates from the coastline, which were processed and sold in small markets. However, the increase in market prices of sea cucumbers encouraged more men to enter what

was until then considered a woman’s occupation, resulting in an increase in the intensity of fishing. The collapse of the coastal Al Wusta holothurian fishery meant that fishers had to venture into increasingly deeper waters, which prevented many of the women from continuing to participate because of safety concerns and cultural restrictions (Al Rashdi and Mclean 2014). This reflects other studies from the agriculture sector, where the increase in the commercial value of a crop traditionally cultivated by women can frequently lead to the cultivation or its benefits being appropriated by men (Gray and Kevane 1999). This study also reiterates the need to look at youth through an intersectional lens, where other social identities, such as gender, can further compound or supersede that of being a youth in determining equitable participation in the fisheries sector.

Punch and Sugden (2013) linked environmental degradation with migration of youth from traditional SSF livelihoods to other options, including as a result of enrollment in formal educational systems. They found that among four different study sites in Upland Asia, prioritization of education was the most significant in an area in Guangdong Province in China that had experienced rapid degradation of the river through increasing pollution from sand mining and industrial discharge, and upstream hydropower development, making the movement of fishing boats difficult. As a result, fishing progressively lost its status as a profitable livelihood, with young people opting for other strategies, including migration to urban areas (Punch and Sugden 2013).

It is also possible that environmental change, together with shifting baseline syndromes, have a role in influencing young people’s perception of the SSF sector, and attitudes to resource use and conservation and collective action, an area that might merit future studies.

The nature of the work, low social status and social stigma

Livelihoods in SSF and aquaculture are regularly associated with seasonality, harsh physical labor and low earnings. In tandem with these factors, SSF and aquaculture can be associated with low social status and poverty, and even social stigma in certain contexts. This makes these sectors, particularly SSF, unattractive, especially for youth who might be

able to move out into what is perceived as more attractive employment opportunities.

Employment in aquaculture and SSF is often seasonal. Soejima (2014) found that young Japanese workers are driven away from oyster processing work because of its highly seasonal nature. The level of physical effort involved can also deter engagement in such work. Older women involved in traditional SSF practices in the Vembanad estuarine system in Kerala, India, reported that they would discourage younger women from continuing in the tradition because of the physically laborious work (Sruthi et al. 2016). Similarly, physical hardship was a major determinant in driving young women away from diving to harvest marine resources (such as abalone, sea cucumbers and sea urchins) in Jeju Island in the Republic of Korea (Li 2012). For young women involved in SSF in the Vembanad estuarine system in Kerala, the physically laborious nature of the work also gives it a low social status. Notably, these women preferred to find employment in peeling for prawn culture businesses (Sruthi et al. 2016), indicating that aquaculture was seen as a more attractive option, at least in this context.

The low social status associated with aquaculture and fisheries can have broader consequences for youth. According to the KIIs, factory work in Bangladesh, including processing work for aquaculture, is frequently associated with social stigma and low social status for both women and men. This social stigma can lead to diminished marriage prospects for young unmarried women employed in shrimp processing plants (EJF 2003). However, while the key informants also reiterated this, it was felt that divorced or widowed women who were employed in such plants are less likely to be viewed as a financial burden by their households. Furthermore, the key informants felt that the number of girls given away in marriage at a young age might be reduced as a result of the income such employment options provide.

Exploitative and discriminatory working conditions

Youth can be vulnerable to exploitation in SSF and aquaculture sectors. This includes the practice of child labor, as well as the employment of youth under precarious, low-paying and undignified working environments. Certain points of the value

chains, such as retailing, see the participation of a larger number of women, and other points, such as processing in factory settings, especially young women. These women often face vulnerabilities related to discrimination in work and pay and sometimes sexual harassment and violence.

Child labor remains a concern in the aquaculture and SSF value chains. Studies from four countries, including Bangladesh, revealed that children, the majority of them boys, can represent up to 9%–12% of the total number of individuals employed in the fisheries sector (Allison et al. 2011). In Bangladesh, where the shrimp and seafood industry provides the country with its second-largest foreign exchange earnings, after garments, children are frequently employed in shrimp processing depots (EJF 2003). This was also confirmed from the KIIs. These children can work for as long as 9 hours, with poor pay and heightened exposure to physical stress and injuries (EJF 2003). However, it must also be noted that the labor laws in Bangladesh make provisions for the employment of adolescents (14–18 years old) under certain conditions (Nuruzzaman et al. 2014).

Seafood processing factories can also employ migrant workers, who, on account of their legal status and the lack of protection this affords, are vulnerable to exploitative working conditions. The Asia Foundation and the ILO (2015) found that in Thailand it is common for migrant children, many from Myanmar, to work in shrimp and seafood processing factories. These children usually work longer hours than other employees do at the factories, and as a result of this and other factors are less likely to attend school (Asia Foundation and ILO 2015).

The key informants also pointed out that not all involvement of children in SSF and aquaculture should be regarded as child labor. White (2012) viewed such instances of children working together with their families alongside their education as a valuable means of skill accumulation and cautions against such practices being mischaracterized as child labor. For instance, in Myanmar, according to the KIIs, it is common for children and young adolescents to help out in aquaculture production activities at home with tasks such as feeding fish and watching fishponds. Some of these tasks can be a part of play activities, for instance, harvesting the fish from the ponds after they have been drained.

As discussed previously, the positioning of women and men in the SSF and aquaculture value chains frequently takes on a gendered dimension, with more women than men carrying out certain niches such as processing and postharvest activities, like marketing.

While doing these types of work, women (including young women) face discrimination in work and pay, in addition to the danger of various forms of harassment. In Egypt, according to the KII, women (including young women) who sell fish by road corners (an illegal act)

often face harassment from the police. These women fish retailers, many of whom do not have licenses to sell fish, face weekly threats of arrest and often have limited bargaining power in managing these situations.

In Zambia, “fish for sex” is a challenge women (including young women) reportedly face in SSF. In a report by Béné and Merten (2008), fish for sex refers to particular “arrangements” between female fish traders and fishermen where the female fish traders engage in sexual relationships with the male fishers to secure a supply of fish. The report



Women drying fish, Myanmar.

further indicated that such transactional sex is perceived to happen as a result of individual economic impoverishment. Specifically, female fish traders who do not have the money to buy fish from male fishers are “forced” to agree to sex to secure their access to fish. Béné and Merten (2008) suggest that the large majority of women engaged in fish for sex are older women (married, widowed and divorced), though single, young and unmarried women (some still adolescent)

are also engaged in this practice. This was also confirmed by key informants from Zambia.

Certain points along value chains, particularly in aquaculture, tend to employ younger women more than other social groups, making the challenges specific to these contexts more applicable to younger women. This is explored further in Box 6.

Box 6. Challenges young women face while engaging in processing niches of aquaculture value chains.

While the rapidly expanding brackish water shrimp export industry in Bangladesh has created employment opportunities, it has also been subjected to criticism for its lack of quality opportunities, particularly for women. (Nuruzzaman et al. 2014).

It is a common trend globally for export production plants to employ women, driven by the lower wages that could be paid to female employees and the perceived docility and nimbleness of women for this work (Kibria 1995). In the case of the readymade garment industry, the most dominant export production in Bangladesh (Kabeer and Mahmud 2004), the majority of workers are young women, many unmarried or married without children (Kibria 1995; Kabeer and Mahmud 2004). Most women do not view working in the garment factory as a long-term option, but as a short term means of accumulating savings until they leave to get married or have children (Kabeer and Mahmud 2004). It appears that the shrimp processing plants are not exceptions to this pattern, tending to employ individuals who are female and perceived to be better suited for processing work and receptive to lower wages. The majority of these women are young and unmarried, so they do not have to balance domestic responsibilities with their work at the plants and are able to work longer hours (Pokrant and Reeves 2003).

The majority of employees in the shrimp processing plants comprise these women, and they are usually employed as contract workers. Male staff usually hold the small cadre of technical and managerial positions under permanent contracts (Nuruzzaman et al. 2014). The women working as contract workers typically earn salaries that are half of what the men earn. This is partly related to the types of jobs women are employed to do, such as washing and processing the shrimp. These are considered “female jobs,” being similar to domestic work. Jobs that are considered more “skilled,” such as grading the shrimp purchased from the suppliers, are dominated by men (Pokrant and Reeves 2003). Furthermore, these young women workers are not entitled to many of the privileges available to their male counterparts and had limited opportunities to progress to managerial positions (Nuruzzaman et al. 2014). According to the KIs, this has led to some of these women questioning the value of education, feeling that it does not provide them with additional advantages in terms of career opportunities.

Instances of sexual harassment have also been documented in these processing plants (Nuruzzaman et al. 2014). These factories are minimally regulated legally, with government inspection of working conditions often absent (Pokrant and Reeves 2003). However, many of these women, being young and unmarried, are reluctant to expose such violations fearing the ensuing social stigma (Nuruzzaman et al. 2014).

Opportunities

Key findings

Although youth face substantial challenges in getting or staying involved in fisheries and aquaculture, there is also potential for existing and newly opening up spaces for productive youth participation.

Creating employment opportunities and income generation: One of the main drivers for youth participation in particularly aquaculture, appears to be the potential for employment and income generation. While a well-developed aquaculture sector alone may not be youth inclusive, the limited literature on the topic of youth engagement shows that at certain scales and in certain contexts, at least, a significant number of those employed are young people. Furthermore, in supporting youth livelihoods in SSFs and aquaculture, it is possible that moving further down the value chain to areas such as processing and trading may hold promise, given the constraints youth face in engaging in primary production. This assumption still remains theoretical, however, and requires further studies to validate it. Discussions and efforts in this regard also need to take into account the challenges experienced by youth who already interact with some of these value chain points and the types of employment opportunities they offer.

Adopting new knowledge and technology: Being agile, able to take risks, responsive and adaptive to new knowledge and technological advances are qualities that appear to be associated with young people, more than with individuals of other age groups. Increased integration of ICT and a focus on entrepreneurship approaches are perceived as ways through which agriculture, aquaculture and SSF can tap into these qualities to make these sectors more attractive to youth. However, while some examples exist from the aquaculture and SSF sectors in this regard, these links still remain unproven. Further work is required for validation. In addition, it must be noted that not all youth would share these characteristics or have similar abilities of access.

Interventions by the government and stakeholders: Governments, development organizations, research institutions and the private sector aim to promote youth engagement in the SSF and aquaculture sectors through targeted interventions. The role of these actors can range from enabling policy environments and institutional arrangements to knowledge and skill building for youth. Such youth-centered interventions are particularly pronounced in Africa.

Creating employment opportunities and income generation

One of the main drivers for youth participation in particularly aquaculture, appears to be the potential for employment and income generation. While a well-developed aquaculture sector alone may not be youth inclusive, the limited literature on the topic of youth engagement shows that at certain scales and in certain contexts, at least, a significant number of those employed are young people. Furthermore, in supporting youth livelihoods in SSF and aquaculture, it is possible that moving further down the value chain to areas such as processing and trading may hold promise, given the constraints youth face in engaging in primary production. This assumption still remains theoretical, however, and requires further studies

to validate it. Discussions and efforts in this regard also need to take into account the challenges experienced by youth who already interact with some of these value chain points and the types of employment opportunities they offer.

The level of development in the aquaculture sector of a country can determine the number and type of jobs available for young people. For example, the thriving aquaculture sector in Vietnam makes it a promising choice of employment for graduates, according to the key informants. Graduates are able to find several job opportunities to work as farm advisors, sales people, quality control personnel, technicians or researchers. In contrast, a struggling aquaculture sector in Cambodia affords little opportunity for employment and entrepreneurship for

young people. The lack of development is due, in part, to well-established aquaculture sectors existing in neighboring countries, such as Vietnam and Thailand, through which fish is imported at competitive prices into Cambodia.

The key informants felt that a thriving aquaculture sector has the potential to create employment opportunities for youth. In a global survey of aquaculture farms, Hishamunda et al. (2014) found that aquaculture has contributed to job creation in most cases, particularly to non-seasonal jobs, with the majority of those employed being between the ages of 20 and 39. They conclude that the presence of these businesses has provided incentives for youth to remain in their home communities instead of migrating to urban areas. This was significant because many of the farms studied were situated in isolated areas, where other employment opportunities were not substantial. In Africa, a study by Macfadyen et al. (2011) indicated that the fish farming sector in Egypt generates direct employment at a rate of 8.3 full-time jobs for each 100 t of fish produced per year, with nearly 50% of the employees being young men (below 30 years of age). In the case of Zambia, Krishnan and Peterburs (2017) discussed how the largely low-skilled nature of the jobs that is expanding the aquaculture sector has the potential to provide employment opportunities poor and young individuals and other vulnerable groups. The sector's potential for generating income for young people was also brought up regarding shrimp processing work in Bangladesh, where the wages received

enable young women to save money for marriage dowries, which could otherwise be substantial for poorer households (Nuruzzaman et al. 2014).

However, it must be noted that a well-developed aquaculture sector does not automatically guarantee jobs for young people. For example, in Zambia, according to the key informants, while government support is available for the aquaculture sector, this support is largely diverted toward bigger aquaculture farms, with smaller farms that largely employ women and youth receiving less attention. Béné et al. (2016) found that the scale of operations can determine how the aquaculture sector contributes to poverty reduction. Studies have associated commercial aquaculture with the potential for poverty reduction of households and communities, especially in Asia. However, in the case of smallholder extensive aquaculture systems, fewer studies are available on how the employment created and income generated by aquaculture can benefit low-income households (Béné et al. 2016).

Given the constraints in accessing land and other resources for primary production, the key informants felt that fruitful opportunities for youth employment could lie further down the aquaculture and SSF value chains, such as in processing, value addition and trading. With regard to processing, they suggested that this could also create openings for young women with children to get involved, as it could serve as a homestead-based, income-generating activity.



Photo credit: Hampus Eriksson/WorldFish

Male youth collecting sea cucumbers, Solomon Islands.

In the case of Myanmar, the key informants highlighted processing and value addition, considered as lucrative activities, as some of the other nodes in the value chains for possible youth engagement. These types of value addition activities, which female-run enterprises carry out as part of the floodplain fisheries of Myanmar, were brought up as examples of such possibilities. In these enterprises, while the high-value fish among the catch (such as snakehead, climbing perch, eels or catfish) are sold directly to external markets, such as those in Yangon, the low-value fish (like pool barb) are fermented or pickled to increase its value. Such processed fish can fetch high prices, as there is a cultural preference for these products. While the sustainability of these ventures is uncertain in this particular context because of the constant depletion of wild stocks, the key informants felt it is possible that similar niches for processing, value addition and marketing are available elsewhere for youth engagement.

In the case of Zambia, another area for youth involvement that the key informants suggested was the trading segment of the value chain, where the fish are bought from fish farmers or processors and sold to either retailers or supermarkets. They felt that youth perceive trading as lucrative because of the possibility of earning money on a daily basis and the high turnover rates involved.

It is possible, therefore, that several opportunities exist in different nodes in the SSF and aquaculture value chains for increasing the engagement of youth in these sectors. However, the key informants cautioned that the extent to which these opportunities can provide dignified and well-paid employment still remains unclear. As discussed in Chapter 6 under the section Constraints, in certain contexts, youth already engage substantially in points in the value chain such as processing and trading, with the challenges they face in this work having already received some study. These experiences would have to be considered carefully to realize the promise of these value chain points in providing equitable employment opportunities for youth.

Furthermore, on youth engagement in the agriculture sector, Ripoll et al. (2017) discussed an escalating trend of national food production policies shifting from meeting local demand to export-import models through open economies.

In Cambodia, as discussed above, cheap imports from neighboring countries have meant that the aquaculture sector has struggled to expand domestically. In studies moving forward, it is important to understand how increasingly liberalized and globalized economies might pose new and evolving opportunities and constraints for youth participation in aquaculture as well as the SSF sector.

Adopting new knowledge and technology

Being agile, able to take risks, responsive and adaptive to new knowledge and technological advances are qualities that appear to be associated with young people, more than with individuals of other age groups. Increased integration of ICT and a focus on entrepreneurship approaches are perceived as ways through which agriculture, aquaculture and SSF can tap into these qualities to make these sectors more attractive to youth. However, while some examples exist from the aquaculture and SSF sectors in this regard, these links still remain unproven. Further work is required for validation. In addition, it must be noted that not all youth would share these characteristics or have similar abilities of access.

Young people are characterized as being more agile and responsive to new knowledge and technological advances, and more entrepreneurial than individuals of other age groups. New approaches to the development of agriculture, (and aquaculture and SSF sectors) such as increased integration of ICT and an elevated emphasis on entrepreneurship, are therefore popularly highlighted as entry points for youth re-engagement in the sector (Sumberg et al. 2012; Pyburn et al. 2015; Ripoll et al. 2017). However, only a limited number of studies have looked at these links so far, some of which are outlined below.

Youth workers have been associated with increased productivity and more agile work in a few studies, as in the case of the oyster aquaculture industry in Japan (Soejima 2014). Here, young women workers from China joined the aquaculture sector after industrial training internships. Owing to their age, they were considered more agile in their work—processing the oysters faster and with less damage than older workers. They were also paid less than the older workers. As a result, households that hired

these workers were able to expand operations, further raising the popularity of these interns as employees. However, this has also meant the gradual displacement of locally hired women and elderly people who had traditionally been employed in the sector, depriving them of income as well as an occupation (Soejima 2014).

Certain studies have associated youth with being open to new ideas and knowledge. Youth farmers are considered to adopt new technologies more easily (MIJARC, IFAD and FAO 2012). Studies carried out by Pounraj and Rathakrishnan (2011) in Tamil Nadu, India, Goswami and Samajdar (2011) in West Bengal, India, and Talukdar and Sontaki (2006) in Assam, India, have found that receptivity to new technologies for aquaculture ventures was higher among younger farmers and this showed a negative correlation with age. In the case of SSF, there has been some documentation of receptivity among young people to learning about and participating in resource conservation measures. In Solomon Islands, the key informants referred to instances of youth being keen to learn about CBRM ideas and to convey this information to other young people in their networks. An example from Solomon Islands of youth adopting new knowledge is discussed in Box 7.

In attempts to engage youth in the aquaculture sector, the key informants suggested that changing modes of production in SSF and aquaculture can play a significant role. It was felt that youth might be more likely to get involved if there was scope for higher levels of commercialization or entrepreneurship.

As discussed in Box 8, a project in Ghana was highlighted as an example of piloting youth participation in a commercial aquaculture venture.

ICT and agricultural (as well as SSF and aquaculture) innovation are widely considered a means of making these sectors more enticing as youth livelihoods. The key informants believed that youth are potentially early adopters of ICT, and it is possible that expanding the number of ICT applications in SSF and aquaculture can improve youth perceptions of the sectors. Such applications could include more sophisticated record keeping, sectoral promotion through social media and the creation of virtual markets, as well as better access to training opportunities, capital and other resources (UNDESA 2013). The key informants suggested the online platform Amar Desh Amar Gram (amardeshamargram.com) in Bangladesh as an example of a virtual marketplace application connected to the SSF and aquaculture sectors, where farmers, including fish farmers, are able to set up online profiles to connect to buyers.

The adoption of social media platforms, particularly to exchange market information on SSF and aquaculture, has been observed by the key informants in both Africa and the Asia-Pacific. In Myanmar, where it is a common practice to access the internet through smartphones, young women and men in local marketplaces have been observed using social media platforms, such as Facebook, to exchange market information on prices and the demand for different types of fish. In Tanzania, the messaging platform Whatsapp has been observed for similar exchanges of

Box 7. Youth involvement in the adoption and dissemination of CBRM measures.

Abernethy et al. (2014) discuss a youth group from Solomon Islands that takes up the leadership to promote CBRM within their community, after having observed the benefits of this arrangement in a neighboring area. The group was able to observe how well a coral reef-based ecosystem was thriving as a result of a *kastom* arrangement (customary arrangement where coral reefs are protected from fishing for certain periods of time), after diving in a neighboring *kastom* area. The group then pitched a similar idea for its community reef to the elders in the community back at home, where it was met with enthusiasm. This was, in part, because issues such as alcoholism had previously plagued the youth of the community, and it was felt that such an initiative from the youth would give them a better sense of belonging and responsibility. Discussions with NGOs provided the group with further information. A Youth Conservation Committee was mobilized to hold weekly sessions during church services, an initiative that ran for nearly a year. Led by a charismatic youth champion, the group promoted the benefits of closing off the reef, helping to disseminate the idea among the community.

knowledge by youth fish traders. In Nigeria, Youth Agripreneurs, an initiative of the International Institute of Tropical Agriculture (IITA), was suggested by the key informants as an example of a development program where youth used social media for marketing and trading of agricultural products. This was as part of a program that aimed to train and engage willing young people in modern farming practices and agribusiness.

The key informants also provided examples from Bangladesh where ICT applications were used by female entrepreneurs. Info Ladies is an entrepreneurship model where young women from rural areas and low-income families are given support to visit remote villages and provide ICT and other knowledge services. The concept was launched by a local not-for-profit venture, and supports young women who have usually completed secondary education but would otherwise have limited employment opportunities. Training and ICT hardware, such as laptops, are provided to these women at subsidized rates. The women cycle to remote villages where access to the internet, extension services and health facilities is limited. For a small fee, they assist the villagers in connecting to the internet and accessing information online, including details on agriculture and extension services. WorldFish, along with the International Rice Research Institute (IRRI) and the International Maize and Wheat Improvement Center (CIMMYT), has conducted a training

session for some of the women in this program on aquaculture-related information and services.

While such examples exist of associating youth with certain qualities that lend themselves well for ICT- and entrepreneurship-related interventions, the evidence remains scattered and requires extensive studies to understand where and how this might hold true. In addition, it is important to refrain from essentialisms, homogeneously attributing these characteristics to all young people (Ripoll et al. 2017).

In the case of ICT and other technological advances, it is also important to note that not all youth would have similar access or capabilities in terms of using these interventions to engage in SSF and aquaculture. Rural women often have less access to ICT tools than rural men, as a result of disparities in literacy levels and command of financial resources to enable access (FAO, CTA and IFAD 2014). Although mobile technologies might be widely prevalent in rural areas, internet availability is not (FAO, CTA and IFAD 2014). The high cost of accessing ICT tools, unreliable connectivity, inadequate capacity and limited access to finance for expansion (Lohento and Ajilore 2015) can all contribute to unequal access to ICT technologies for youth. These issues should be addressed, if ICT and other forms of technology integration are to be a pathway for increased youth engagement in SSF and aquaculture.

Box 8. The CapVal project.

CapVal (Creating and Capturing Value: Supporting Enterprises for Urban Liquid and Solid Wastes Recycling for Food, Energy and Clean Environment) was implemented in 2015 with support from IWMI. The pilot project tested the production of catfish (*Clarias gariepinus*) with the use of treated wastewater. In Ghana, limited funds available for operation and maintenance often hinder the functionality of wastewater treatment plants. The CapVal project was, therefore, designed to use catfish production as a means of income generation for wastewater treatment. The assumptions underlying the design of the project were that catfish production can potentially (i) help to raise funds for the operation and maintenance of the treatment plant, (ii) create employment opportunities for youth, and (iii) increase catfish supply in the market.

The project was implemented through a public-private partnership where the government owned the ponds and the project provided office accommodation, a hatchery for the business and technical advice. A young entrepreneur ran the business, producing fingerlings, rearing fish in ponds and selling them. Such a business would typically require both skilled labor (for collecting the samples and analysis) and unskilled labor (for other activities). In this pilot project, it was possible to create employment opportunities for about five to seven young people.

Interventions by governments and other stakeholders

Governments, development organizations, research institutions and the private sector aim to promote youth engagement in the SSF and aquaculture sectors through targeted interventions. The role of these actors can range from enabling policy environments and institutional arrangements to knowledge and skill building for youth. Such youth-centered interventions are particularly pronounced in Africa.

Government policies can shape the types of livelihood and employment opportunities that SSF and aquaculture can offer, including for youth. According to the key informants, aquaculture in Egypt experienced sectoral growth in the 1980s, as a result of significant levels of investment in infrastructure and capacity development. These investments supported hatcheries, multiplication centers, public breeding programs, liberalization of seed prices, and public sector capacity development, in addition to capacity development for young students. In Zambia, according to the key informants, the government encourages youth participation in aquaculture while discouraging their participation in SSF. This is partly a result of the overexploited nature of SSF and to promote sustainable fishing. Within the aquaculture sector, a focused youth policy and strategy has enabled the Ministry of Fisheries and Livestock to formulate projects targeting youth-focused interventions and to also allocate money for sectoral development.

Governments can also look to cooperatives and other groups to play a role in enhancing youth participation. Through cooperatives, according to the key informants, governments and other development partners in Nigeria are able to reach youth with better ease to provide a diversity of inputs, ranging from loans and business security instruments to access rights to waterbodies and land. The key informants also felt that cooperatives can act as organized and formal platforms for youth to channel their voices. In Tanzania, the key informants brought up government-established associations such as the Aquaculture Association of Tanzania (AAT) as an example of a formal pathway for youth to share their views on engagement in aquaculture. The AAT aims to improve youth participation

through working with Beach Management Units (decentralized fishery management units that function as part of local governments) to facilitate equitable representation of various segments of the society, including youth. It also provides support to youth in collective income-earning ventures (such as through cooperatives), including aquaculture production. At a more regional level, FAO (2014b) recommended that youth become more representative of aquaculture producer organizations, cooperatives and regional platforms, such as the Aquaculture Network for Africa.

Government policies and programs can seek to enhance the capacity of youth to engage in SSF and aquaculture. The key informants pointed out several examples to illustrate this. In Bangladesh and Zambia, the government supports educational opportunities and training in the aquaculture sector for youth, with the youth being able to find employment as extension workers after participating in such programs. Similarly, universities in Egypt provide qualifications on aquaculture aimed at development of, and youth participation in, the sector. The Government of Tanzania promotes sustainable aquaculture among youth through training conducted by the offices of the Ministry of Livestock and Fisheries, Fisheries Education Training Agency (FETA), University of Dar es Salaam, Sokoine University of Agriculture and the AAT, among others. In Nigeria, the National Youth Service Corps program enables graduates to be attached to fish farms and processing factories to gain practical experience prior to employment. Here, the government also works to encourage youth and women to perceive agriculture and fisheries and their value chains (especially the marketing angle) through a business lens (Cheke 2014).

It must be noted, however, that government support for a youth-inclusive aquaculture sector does not automatically translate to engagement opportunities for youth. The key informants felt that while policies may support youth involvement, enforcement remains a challenge, including due to a lack resource resources.

The key informants suggested that the private sector has a role to play in providing employment opportunities for youth in aquaculture, as well as changing youth perceptions of the sector. Input and technology supply were highlighted as ways

in which the private sector can support youth engagement.

Youth engagement in agriculture as well as SSF and aquaculture is also the focus of several development organizations and research. An example of this is the Special Programme for Aquaculture Development in Africa (SPADA) by FAO. SPADA considers youth an explicit target group when assisting at least two-thirds of the countries in sub-Saharan Africa to build on their national aquaculture strategies and accompanying plans, legislation and regulations. Introduced in 2008 by FAO's Department of Fisheries and Aquaculture, SPADA aims to promote a unified approach to aquaculture development in countries in sub-Saharan Africa (FAO 2014b). Another example is the Young Professionals for Agricultural

Development (YPARD) (ypard.net), a global network of young professionals working in the agriculture sector. A key project by YPARD, in collaboration with the Global Forum on Agricultural Research and Innovation, has been the Youth Agripreneurs Project. The project provided seed funding as well as leadership, management and technical mentoring through a competitive process to enable young people to develop agribusinesses. The key informants felt that the extensive YPARD network could potentially be leveraged for future work targeting youth involvement in SSF and aquaculture.

Initiatives by WorldFish and partner organizations are discussed in the following chapter.



Photo credit: Jaston Kalambwe/WorldFish

Female youth in a community conversation, Zambia.

Chapter 7: Initiatives by WorldFish and partners

Initiatives by WorldFish and partner organizations in relation to youth engagement in aquaculture, SSF and value chains are discussed in this chapter. The information presented is predominantly based on the KIs.

Initiatives in Africa

Egypt

WorldFish initiatives

The WorldFish office in Egypt runs a number of initiatives to promote the engagement of youth in SSF and aquaculture. The objective is to provide a rationale for engaging youth in these sectors while also linking youth with government, the private sector, and aquaculture and fisheries practitioners. These initiatives are implemented in several ways: (i) through the collection of sex- and age-disaggregated data, (ii) designing learning methods that incorporate youth approaches, (iii) capacity building of youth by supporting masters and PhD students as part of projects, (iv) participatory action research, (v) leadership and entrepreneurship coaching, and (vi) developing pilot projects and small-scale enterprises suitable for youth engagement. Through seminars, workshops and campaigns, WorldFish Egypt also attempts to raise awareness among young graduates from high schools, colleges and universities about the opportunities across the aquaculture value chains. These events aim to capture the interests of youth looking for livelihood options, including those who are unemployed.

Examples that aim to improve youth participation in the aquaculture sector are the Sustainable Transformation of Egypt's Aquaculture Market System (STREAMS) project, the EWFIRE project and the Improving Youth Employment in Aswan program. The focus of STREAMS is to improve market links between upstream and downstream actors in the value chain by providing information about feed suppliers, seed suppliers, veterinary services, retailers, wholesalers and supermarkets to improve access to input and output markets. The number of employment opportunities

created for youth is an indicator used to evaluate project outcomes. EWFIRE aims to empower women (including young women) through the establishment of community-based fish processing centers involving women's saving and loan associations, legalizing women retailer associations, formalizing licenses, providing women with basic technologies (such as ice boxes and tricycles), and training on delivery. An important objective of the project is mitigating the various forms of harassment often faced by women retailers. The Improving Youth Employment in Aswan program supports income generation and employment of youth in Aswan Governorate, Upper Egypt.

WorldFish Egypt has also initiated innovation platforms that bring together youth and adults to share ideas, set up group guidelines and values for better participation in SSF and aquaculture, and to share leadership and accountability. This includes working toward long-term relationships between youth and older individuals who are more experienced in SSF and aquaculture. Assessments carried out on the outcomes of these interventions reveal that youth who participated effectively in the innovation platforms have better capacity to address the challenges faced in aquaculture and fisheries.

Nigeria

WorldFish initiatives

The WorldFish office in Nigeria has worked toward capacity building of youth and by partnering with the University of Ibadan to provide scholarships to national students to conduct research on the magnitude of cross-border trade flows between Nigeria and neighboring states. WorldFish Nigeria also works toward influencing youth and gender policies to increase the participation of women and youth in the aquaculture sector.

Initiatives by other stakeholders

Capacity building of youth and awareness raising, especially of aquaculture, have been areas of focus for some of the development work carried out in this sector in Nigeria. The IITA Youth Agripreneurs

program, initiated in 2012 in Ibadan, Nigeria, explores mechanisms that support educated youth in professional careers in agriculture and agribusiness, including fisheries. Participants are provided with opportunities to conduct agribusiness incubations that explore options for income generation and subsequently develop and implement business plans around the more promising options. Specific to the aquaculture sector, the project provides support on several aspects, including broodstock supply, fingerling distribution, value addition and marketing. Similarly, through a unilateral trust fund, FAO and the UNDP have initiated two youth-inclusive projects in Imo, Oyo, Ondo, Kogi, Ogun and Ekiti states of Nigeria: (1) the Sustainable Aquaculture Systems for Nigeria Cluster Fish Farmers Project and (2) the Creating Decent Employment Opportunities for Youth through Sustainable Aquaculture System Value Chain Project.

Tanzania

WorldFish initiatives

The WorldFish office in Tanzania conducts substantial work on increasing aquaculture production, reducing postharvest fish losses and enhancing the role of fish in nutrition. In relation to this, targeted work includes providing opportunities for youth to participate in research activities, promoting innovation to provide quality seed, feed, etc., supporting farmers (including youth) to get quality products at affordable prices, supporting youth with best management practices, and linking youth with relevant stakeholders in the sector.

Initiatives by other stakeholders

The Government of Tanzania works in a number of ways to engage youth, including the promotion of sustainable aquaculture through training opportunities, conducted through the offices of the Ministry of Livestock and Fisheries, FETA, University of Dar es Salaam, Sokoine University of Agriculture and the AAT, among others.

Zambia

WorldFish initiatives

Some of the youth-targeted interventions by the WorldFish office in Zambia include raising

awareness about the viability of an aquaculture business through knowledge sharing and campaigning, working with fish traders and fishers to decrease the prevalence of harassment (fish for sex) through the use of media and public forums to raise awareness and promote changes in behavior, and capacity building on human immunodeficiency virus (HIV). This work is carried out through training programs, for example, on how to grow fingerlings. The key informants suggested that youth participation in the aquaculture sector has improved, as a result of their involvement in the supply of feed and fingerlings, which also had the effect of increasing feed supply in the market.

Together with the Southern African Development Community, WorldFish implements a program aimed at providing hands-on experience in aquaculture to students, and for this experience to be accounted as academic credit. In Malawi, the program focuses on aqua-trans—that is, transitioning youth from being unemployed to gaining employment in a fish-related business, such as fish farming, processing or marketing.

Initiatives by other stakeholders

Efforts by the government, together with donor support, to encourage youth participation in aquaculture include the Aquaculture Enterprise Development Project, funded by the African Development Bank and conducted from 2017 to 2021, and the Youth Technical and Vocational Training Strategy program, supported by the Norwegian Agency for Development Cooperation. The Aquaculture Enterprise Development Project aims to support aquaculture entrepreneurs, develop growth-enabling infrastructure, and oversee project management and institutional capacity building. The project operates in Southern Zambia (Chipepo and Siavonga), Lusaka (Rufunsa), Luapula (Bangweulu), North-Western (Kasempa) and Northern (Mungwi) provinces. The Youth Technical and Vocational Training Strategy program, implemented in partnership with WorldFish and the Natural Resources Development College, works toward ensuring there are qualified extension workers and in developing curricula and syllabi related to aquaculture.

Initiatives in the Asia-Pacific

Bangladesh

WorldFish initiatives

The WorldFish office in Bangladesh has not, in a major way, targeted youth as a specific category until now. Youth concerns were specifically looked at in a study conducted on women's empowerment in aquaculture in the country (Choudhury et al. 2017), but for the most part, youth have only been studied as a part of larger target groups. Examples of such projects include those focusing on increasing production, income and employment, and those focusing on the nutrition of young women of reproductive age. WorldFish has also involved youth in certain aspects of its work, such as hiring local youth as community mobilizers, extension agents, research assistants and researchers. For example, as part of the CGIAR Research Program on Aquatic Agricultural Systems, led by WorldFish, youth were involved as co-researchers or farmer researchers. Moving forward, a new project—Bangladesh Aquaculture and Nutrition Activity (BANA)—funded by the United States Agency for International Development (USAID) through one of its components, takes a youth-centric and market approach, and aims to look at youth entrepreneurship in aquaculture.

Initiatives by other stakeholders

In Bangladesh, while several projects have targeted aquaculture development, few have adequately considered youth. Examples of projects that have engaged with youth include training programs for alternative income generation during fishing bans, involving youth in mechanical work, such as fixing electronics, driving skills, handicrafts and tending to tree nurseries. Other examples include the NGO Winrock International, which has worked on youth entrepreneurship in agriculture. In general, the key informants felt that there is a growing realization of the role that the large number of unemployed youth in Bangladesh can play in reviving SSF and aquaculture in the country.

Cambodia

Similar to WorldFish Bangladesh, work by the WorldFish office in Cambodia has not specifically targeted youth. An example where youth have

been included as part of a larger target group is the Rice Field Fisheries project supported by USAID, which aims to increase the productivity of rice field fisheries, and encourage families to harvest wild fish for both sale and consumption. As the project has targeted households with children less than 5 years old, many of the women involved fall between the age classes of “youth.” Work on sustaining fish refuges has included awareness raising among schoolchildren on the importance of conserving these habitats. Finally, age-related indicators have been used in analyses of fishers involved in rice field fisheries. WorldFish Cambodia is looking at potential ways for increasing youth engagement in its work going forward.

Myanmar

WorldFish initiatives

The WorldFish office in Myanmar has not explicitly targeted youth in any of its projects up to now. Young people are involved in data gathering and monitoring activities, and have been trained on simple indicators and cost-benefit calculations.

WorldFish Myanmar sees the potential to incorporate youth considerations into some of its work going forward. Examples of this include work on integrated systems that involve rice cultivation, fisheries and potentially vegetable cultivation, involving the CGIAR centers IWMI, IRRI and WorldFish. The potential expansion of the aquaculture sector might offer opportunities for youth engagement, especially in the areas of marketing and processing. Similarly, any expansion of community-based fishery systems might provide opportunities for youth involvement in the management of these institutions. With regard to ICT integration with aquaculture, the Greenovator (www.en.greenwaymyanmar.org) mobile application may open up opportunities for youth engagement, although as yet it is not clear how this will take place. Greenovator is originally an application linked to the agriculture sector to provide information to farmers on different aspects of cultivation, including location-based weather information, market prices, input prices and plant diseases. It has now been extended to the aquaculture sector through a partnership with WorldFish.

Initiatives by other stakeholders

In Myanmar, organizations that work on youth issues include Scaling Up Nutrition, an international alliance that works with young mothers, many of them youth, and the ILO, which works with youth employed in offshore fishing vessels.

Solomon Islands

WorldFish initiatives

In Solomon Islands, past projects centered on CBRM have included youth, although not as a target category. A significant number of projects in Solomon Islands are related to CBRM, where WorldFish works with communities and relevant government departments to develop resource management plans and to translate these plans at the national level. Youth have also been involved in monitoring activities.

The WorldFish office in Solomon Islands is currently looking at ways of initiating more youth-oriented work. An example of this is a project with the Pacific Community (SPC), where young people from six communities were provided with training on CBRM and other aspects of SSF businesses, including the construction of FADs and FAD fishing techniques, fish handling and processing, and entrepreneurship. The results of this training were mixed, as some young people stayed on in the SSF sector, while others moved on to other employment options. It was felt that future training programs might meet with more success, if youth with prior experience with fishing were specifically targeted. This is because they would not only benefit more from the training, but were also more likely to continue in the sector following the training. WorldFish has also partnered with youth from the six communities to provide training on theater performances to disseminate messages on CBRM.

Moving forward, WorldFish Solomon Islands is looking at the possibility of a few ways in which youth considerations can be incorporated into broader work. Plans include the reshaping of an existing research station to also serve as a learning hub or training center. Other possibilities include incorporating a youth focus in a study that aims to evaluate the impacts of CBRM and FAD-related interventions through 5-year periods. In

general, data collection practices have included age disaggregation, providing an opportunity for data analysis through a youth lens. Finally, there is an interest in looking at the possibility of incorporating a youth dimension into government plans to expand the aquaculture sector.

Initiatives by other stakeholders

In Solomon Islands, it has been the practice of many of the organizations working on environmental conservation and community engagement, including the World Wide Fund for Nature (WWF), The Nature Conservancy (TNC) and community-based organizations, to have their own youth programs. The SPC, a key scientific and technical organization in the Pacific, advocates and works on youth employment issues, including in fisheries. It is felt that better coordination of all the work that targets youth, including that of the government, is of high importance.

Other work by WorldFish

GENNOVATE is a global research initiative of CGIAR that as part of the project, attempted to understand youth aspirations and norms, and other contextually relevant and important social identities (gender.cgiar.org/themes/gennovate). As part of this initiative, baseline data was collected across all generations, including youth.

Chapter 8: Ways forward

Conclusions

Young people as a demographic is expanding globally, while youth unemployment numbers remain high. Concurrently, it is believed that youth are migrating out of livelihoods in agriculture (and SSF and aquaculture), a trend that is also placed amid concerns about smallholder farming and global food security.

Against this backdrop, this study seeks to explore youth engagement with the SSF and aquaculture production systems and value chains, and how these sectors can pose opportunities and constraints for youth livelihoods. The study covered Africa and the Asia-Pacific, particularly focusing on the eight FISH CRP focal countries of Egypt, Nigeria, Tanzania and Zambia (in Africa) and Bangladesh, Cambodia, Myanmar and Solomon Islands (in the Asia-Pacific).

We found that there are few studies on how youth engage in these sectors. The knowledge gap is particularly evident in the Asia-Pacific. The participation of young women is even less clearly understood. A consequence of this knowledge gap is that discourses, policy interventions and initiatives to strengthen youth engagement tend to be based more on conjecture rather than empirical studies.

From the knowledge available, it appears that youth engagement in these sectors, particularly with SSF livelihoods, is diminishing in several contexts. Youth who do engage face a number of challenges. These include the challenges of access to land, financial and other resources, and having a voice in decision-making processes. Other challenges include possessing limited knowledge and experience, interacting with ecosystems of diminishing productivity, the sectors being associated with social stigma and low social status, and, in certain parts of the value chains, exploitative and discriminatory working conditions. On the other hand, certain opportunities might be available for engagement, including the potential for aquaculture to create employment and livelihoods, ICT and entrepreneurship pathways, and support from

governments and other stakeholders to expand opportunities for participation.

While diminishing engagement in SSF and aquaculture is a phenomenon associated with youth more than other social groups, the youth-specific constraints believed to underpin this trend are not well understood. Certain constraints appear to have youth-specific dimensions to them, for example, possessing limited collateral in accessing financial services. However, other constraints, such as low pay and social status in certain contexts, might be more universally applicable. It is not clear what youth-focused interventions should look like in the case of such universal constraints. The same applies to opportunities for engagement.

At the same time, while some of the constraints (and opportunities) might be more universal, their evolving nature could present stronger consequences for youth. Young people might find themselves less equipped to deal with the increasing presence of climate change or natural resource degradation. Decreasing familiarity with traditional agroecological knowledge and skills could compound this further. Where youth engage in SSF and agriculture as part of diversified livelihood portfolios, trends and developments in agriculture and rural out-migration could impact how young people engage in the SSF sector. Where accessing land or finding employment in agriculture becomes increasingly challenging, youth might find their interactions with SSF also diminishing.

The diversity among youth as a social group also requires more attention. Certain points of the SSF and aquaculture value chains appear to be characterized by the participation of a higher number of certain groups of youth, such as young women, and the nature of this engagement requires specific studies. With regard to the overall sectors, not all youth engage in these value chains uniformly. The constraints to participation might be different or more acute for some youth. Work on opportunities to improve youth participation needs to be particularly cognizant of different youth contextualities. Not all youth would be able to equally benefit from some of the opportunities associated with the sectors, such as ICT- and entrepreneurship-related interventions.

More studies are required to further unpack these findings to recognize why, where, how (and which) youth engage in the SSF and aquaculture, to identify possible patterns from such engagement and to better understand how youth-inclusive SSF, aquaculture and value chains would look like. Such studies could build on existing work looking at youth engagement

in the agriculture sector, some of which was used to shape the analysis in this study. Insights from the field of gender studies could also be useful.

In the following section, we propose four tentative research areas that could set the direction for further work looking at youth engagement in SSF and aquaculture.



Photo credit: iStock.com/ningamwmm

Young man fishing, Myanmar.

Recommendations for potential research areas

The following section puts forward suggestions for potential research areas on youth participation in aquaculture, SSF and value chains.

1. Understanding the impact of economic, political and social shifts at global to local levels on youth involvement in SSF and aquaculture

Developments and trends at different scales, from global to local levels, can be critical in determining current interactions that young people have with SSF and aquaculture, the livelihood options available to them in the sectors and how these will change in the future. These developments and trends include globalization, trade liberalization, interconnectivity between local and global markets, and the consequences of climate change and changing ecosystems. At the national and local levels, such trends would also include the thrust of national policies, structural and rural transformation, changing patterns of landownership, and privatization of natural resources. The demand for fish and fish products can also be expected to change with increasing population growth, changing dietary patterns, and increasing consumer awareness about the environmental and social impacts of SSF and aquaculture.

- How, where and why do youth engage in SSF, aquaculture and value chains? Are there identifiable patterns from such engagement and, if so, what are they?
- How are the above trends and developments determining and changing how youth interact with aquaculture and SSF? What are the impacts of these interactions on these sectors?
- Migration: How are the above trends and developments determining whether and how youth are staying in or moving out of SSF and aquaculture, and out of rural areas?

Previous work carried out by WorldFish: We did not come across any previous work done by WorldFish on this topic and, therefore, could not identify potential partners for engagement.

2. Analysis of the policy architecture that impacts youth involvement in SSF and aquaculture

Different framings emerge of youth development and involvement in aquaculture, SSF and value chains in the policy sphere. Many of these are removed from the reality of the lives, aspirations and needs of youth. Youth rarely get an opportunity to be involved in shaping these policies. The policy sphere does not adequately target the needs and priorities of youth engaging in SSF and aquaculture or pay sufficient attention to the diversity of these needs. Sectoral policies do not adequately consider changing patterns of youth engagement and what these might mean for the future of the sector.

- What are the different constructions and framings of youth involvement in SSF, aquaculture and value chains in the policy architecture, and how are these determined? Where are the significant gaps between the knowledge on youth involvement in SSF, aquaculture and value chains and these policy depictions?
- How does the policy architecture constrain or encourage youth participation in SSF and aquaculture?

Previous work carried out by WorldFish: We did not come across any previous work done by WorldFish on this topic and, therefore, could not identify potential partners for engagement.

3. Understanding the diversity among youth engagement in SSF and aquaculture

Youth are not a homogeneous and atomized group of individuals. In addition to age, several interacting factors determine youth participation in SSF and aquaculture. Some of these include the abilities and aspirations of youth, intersectional identities, and the influence of social ties and networks. These factors result in differences in the ability of youth to access the SSF and aquaculture sectors and value chains, as well as their ability to benefit from this engagement. Such differences could also have implications for the productivity of the sector.

- How do the livelihood aspirations and outcomes of youth intersect with engagement in SSF and aquaculture, including migrating out of the sectors?

What determines these livelihood aspirations and outcomes?

- In what ways might youth be interested in participating in SSF and aquaculture?
- How does age interact with other intersectionalities to produce differences in the ability of youth to access these sectors, as well as their ability to benefit from this engagement? How can this be made more equitable?

Previous work carried out WorldFish: the GENNOVATE project (with other CGIAR centers).

Potential partner organizations: YPARD network; CGIAR centers including IWMI, International Rice Research Institute (IRRI), International Maize and Wheat Improvement Center (CIMMYT) and International Food Policy Research Institute (IFPRI); Australian Centre for International Agricultural Research (ACIAR); and Royal Tropical Institute.

4. Building a youth-oriented approach to SSF and aquaculture

Youth looking to continue in or enter the SSF and aquaculture sectors and value chains face a number of challenges, even as certain opportunities are available or have the possibility of opening up.

- How and where do the following opportunities and constraints impact youth differently from other social groups and, different groups among youth?
- How can these constraints be overcome and opportunities further extended for youth and various groups of youth?

Although we recommend considering the following factors, this is not an exhaustive list:

- The challenge of access: What are the constraints to access (land, financial services, knowledge, inputs, markets, decision-making, and formal and informal networks) for youth? How can these constraints be overcome (including through innovations and models that circumvent the issue of access)?
- Interactions with changing ecological systems: How do youth currently interact with natural ecosystems as well as with management and governance processes? How have systems of knowledge (including ecological and traditional fishing practices) transfer changed and what are

the potential impacts? Do youth have particular needs for adaptive capacity to respond to changing ecological statuses?

- Youth involvement in SSF and aquaculture value chains: Has the expanding aquaculture sector generated more jobs for youth? If so, how? If not, why? What parts of the value chain are youth engaging in, and what are the vulnerabilities and benefits for youth from such involvement? What parts of the value chain are youth not engaging in and what opportunities are available for engagement?
- The role of ICT, entrepreneurship and the private sector: Where and how can increasing integration of ICT improve youth engagement in the SSF and aquaculture value chains? Where and how might entrepreneurship development strategies and private sector involvement contribute to youth-inclusive aquaculture and SSF?

Work with SPC in Solomon Islands and the Feed the Future Bangladesh Aquaculture and Nutrition Activity (BANA) program.

Potential partner organizations: SPC; FAO SPADA; YPARD network; CGIAR centers, including IWMI, IRRI, CIMMYT and IFPRI; ACIAR and Royal Tropical Institute.

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Annex 1. Questionnaire for key informant interviews

The KIIs were conducted with partner organizations for the following reasons:

- Get a better understanding of the work carried out by WorldFish and key partners in FISH focal countries in relation to youth participation.
- Assess the participation of youth in SSF, aquaculture and value chains, opportunities and challenges for participation, interventions by different actors (government organizations, NGOs and others), and the perception of youth toward the aquaculture and fisheries sectors.
- Identify other relevant institutions in the focal countries that are working toward youth participation in aquaculture and SSF, and collect the necessary information (in the sample format shown below).

Partner organization	Focal country/countries in which the partner organization operates	Interviewee/s	Date
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Guiding questions

What does your institute do? (objective, vision, mission)

What is the role of your organization in supporting youth to participate in aquaculture and SSF?

How is “youth” defined in your project and in the focal country?

How is the participation of youth in aquaculture and SSF?

What is being done in the focal country to encourage the participation of youth in productive and income-generating aquaculture and fisheries?

What factors do you think encourage or hold youth back from participating economically in both aquaculture and SSF?

What level of access do youth have to factors of aquaculture production (such as feed and credit) and how could this be improved?

What do you think should be the role of the local or national government to help youth perform better economically in aquaculture and fisheries? The role of NGOs? The role of the private sector?

What do you see as being important in terms of policy, infrastructure, technology, behavioral change, etc., to improve youth participation in the sectors?

What are the perceptions of youth toward economic opportunities within aquaculture and SSF? Have these changed? Why or why not? What were the precipitating factors?

Do you have any documentation, including case studies, that highlights where youth have benefited or lost out as participation in aquaculture and SSF unfolds? If yes, please share these documents with us.

What are the other institutions in the focal countries that work on youth participation in aquaculture and SSF?

Annex 2. List of interviewees

No.	Name	Institute/country	Date
1	Afrina Choudhury	WorldFish, Bangladesh	February 1, 2018
2	Ajibola Olaniyi	International Institute of Tropical Agriculture (IITA), Nigeria	February 28, 2018
3	Alexander Kaminski	WorldFish, Zambia	February 1, 2018
4	Amon P. Shoko	Tanzania Fisheries Research Institute (TAFIRI), Tanzania	February 2, 2018
5	Bill Downing	Independent consultant	March 29, 2018
6	Cynthia McDougall	WorldFish, Malaysia	February 15, 2018
7	Delvene Boso	WorldFish, Solomon Islands	February 9, 2018
8	Harrison Karisa	WorldFish, Nigeria	February 8, 2018
9	Lemlem Aregu Behailu	Former postdoctoral fellow, WorldFish, Myanmar	February 14, 2018
10	Malcolm Dickson	WorldFish, Bangladesh	February 6, 2018
11	Meshach Sukulu (brief interview)	WorldFish, Solomon Islands	July 5, 2018
12	Michael Akester	WorldFish, Myanmar	January 30, 2018
13	Michael Phillips	WorldFish, Malaysia	February 16, 2018
14	Olivier Joffre	WorldFish, Cambodia	March 14, 2018
15	Peter Jackson	WorldFish, Cambodia	December 6, 2018
16	Philip Amoah	International Water Management Institute (IWMI), Ghana	March 19, 2018
17	Seamus Murphy	WorldFish, Egypt	May 31, 2018
18	Sloans K. Chimatiro	WorldFish, Zambia	November 30, 2018
19	Steven Cole	WorldFish, Zambia	January 31, 2018
20	Sven Genschick	WorldFish, Zambia	February 22, 2018
21	Timothy Morris (email interview)	WorldFish, Cambodia	February 6, 2018



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About FISH

The CGIAR Research Program on Fish Agri-Food Systems (FISH) is a multidisciplinary research program. Designed in collaboration with research partners, beneficiaries and stakeholders, FISH develops and implements research innovations that optimize the individual and joint contributions of aquaculture and small-scale fisheries to reducing poverty, improving food and nutrition security and sustaining the underlying natural resources and ecosystems services upon which both depend. The program is led by WorldFish, a member of the CGIAR Consortium. CGIAR is a global research partnership for a food secure future.

For more information, please visit fish.cgiar.org