



## The impacts of the COVID-19 crisis on maternal and child malnutrition in Myanmar

### What to expect, and how to protect

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The COVID-19 crisis has severely disrupted economic activities in Myanmar. A sharp reduction in economic growth and large increases in poverty and food insecurity are anticipated. We explore the associated risks the crisis poses for maternal and child malnutrition and identify actions to mitigate adverse nutritional impacts.

Prior to COVID-19, many mothers and children in Myanmar were nutritionally vulnerable. Among children under five years of age, 58 percent were anemic, 29 percent were stunted, and 7 percent were wasted. Twelve percent of women were underweight, but with large variations across regions. On the supply side, access to nutrition services were limited. Dietary practices are poor with just 22 percent of children aged 6 to 23 months consuming adequately diverse diets.

A multi-country analysis of Demographic Health Surveys in 52 countries models how declines in economic growth contribute to increases in child wasting. This model predicts that the projected 8.6 percentage-point drop in the rate of national income growth in Myanmar in 2020 may lead to over 110,000 extra underfives becoming wasted. These children will be at increased risk of not surviving to their fifth birthday.

Declining incomes due to the COVID-19 crisis, as well as disruptions to Myanmar's food systems, could reduce caloric intake for the most vulnerable. But the main impact is likely to be a significant reduction in dietary diversity. This partially explains the increased risk of wasting, stunting, and micronutrient deficiencies, such as anemia.

Health surveillance data suggests that the COVID-19 lockdown from April 2020 onwards resulted in major disruptions to government maternal and child health services, with vaccinations rates almost falling to zero. There are also significant concerns that fear of mother-to-child transmission of COVID-19 could lead to early cessation of breastfeeding, which poses significant health risks for infants.

## Introduction

The COVID-19 crisis in Myanmar poses a very serious risk to the nutritional status of vulnerable populations, notably women and children, as well as poor urban populations and internally displaced persons. The COVID-19 crisis will hit vulnerable groups through multiple mechanisms.

First, we can expect a sharp decline in dietary quality stemming from the income losses related to international shocks to Myanmar's economy – particularly losses in remittances, tourism, the ready-made garments export industry, and trade revenues – as well as economic contractions in a wide range of sectors due to necessary lockdown and physical distancing measures (Diao et al. 2020). As incomes decline, poorer populations will be forced to consume cheaper sources of calories – such as rice – and fewer fruits, vegetables, and animal-sourced foods rich in micronutrients and high-quality protein. Unfortunately, these income effects could be compounded by disruptions to food markets, as production and trade is interrupted due to lockdown measures, and consumer demand for different foods is altered due to both lockdown measures and more voluntary physical distancing, e.g., fewer shopping trips.

Second, malnutrition could increase on the back of essential healthcare and nutrition service disruptions. As with food markets, these failures could stem from interruptions to the supply of health and nutritional care. Already under-resourced health systems may increasingly divert their efforts from a range of nutritionally important functions, like maternal and child health and prevention and treatment of diarrhea and other infections. In addition, households may voluntarily reduce the health care they obtain in seeking to limit trips that they make to health facilities.

Third, malnutrition could disrupt healthy breastfeeding practices, leading to increased use of inferior substitutes. It is likely that uncertainty around mother to child transmission of COVID-19 may lead to increased levels of anxiety and fear among pregnant and women who are breastfeeding. Many may stop or otherwise alter how they provide this central nutritional caregiving practice to their infant or young child.

In this brief we first outline the expected risks to the nutritional status of Myanmar's population based on evidence from previous economic crises elsewhere in the world and some limited early evidence from the COVID-19 crisis. We then turn to the issue of how to protect nutritionally vulnerable groups over the course of the crisis, especially children and women. We also emphasize the critical need for high-frequency surveillance of vulnerable populations (e.g. through phone surveys and other systems) and close coordination across sectors, including health, agriculture, commerce/trade, and social protection, in planning and implementing actions to protect the nutritionally vulnerable in Myanmar. Even in the absence of crisis, malnutrition is a multidimensional problem that requires multisectoral solutions.

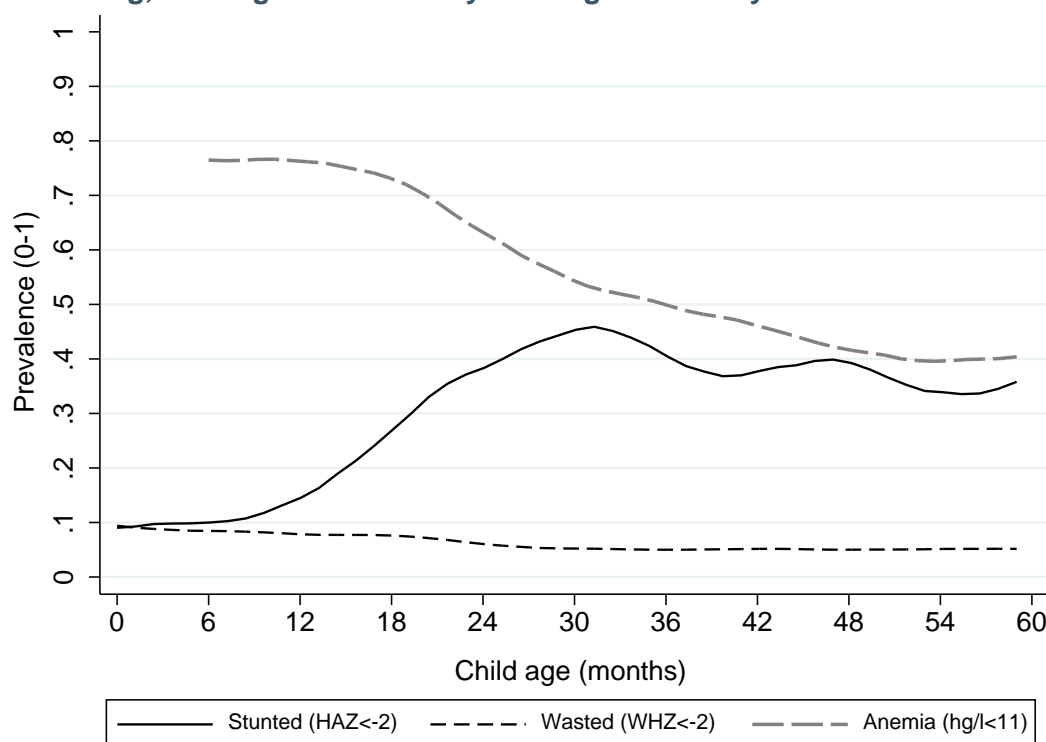
## Background: Pre-COVID-19 nutritional vulnerabilities in Myanmar

Myanmar has made significant improvements in reducing child undernutrition in the past decade and has also developed and is implementing a well-designed nutrition plan in the Multisectoral National Plan of Action on Nutrition (MS-NPAN). However, the country still has high prevalence rates of different forms of malnutrition, as well as a number of extremely vulnerable populations.

Figure 1 reports stunting, wasting, and anemia by child age for Myanmar as a whole. The bold line indicates that around 10 percent of children in Myanmar are stunted at birth, while the dashed line suggests 10 percent are also wasted at birth. Up until around 9 months of age there is little change, but thereafter stunting prevalence rises rapidly up until 24 months before stabilizing. Wasting rates rise more modestly and peak at around 30 months at a very high rate of 20 percent. Anemia – stemming from iron deficiency, other micronutrient deficiencies and infections – is

extremely high at 6 months of age (the first age of measurement) at almost 75 percent. Anemia prevalence remains high until around 18 months of age, but then declines gradually until age 4 years when it stabilizes at around 40 percent. Figure 1 shows that young children in Myanmar are especially vulnerable to different forms of malnutrition. These include children in the womb and breastfed children, both of whom critically depend on good maternal nutrition.

**Figure 1. Stunting, wasting and anemia by child age for the Myanmar 2015-16 DHS**



Source: Authors' estimates from the 2015-16 Demographic Health Survey.

In Table 1 we report some key indicators for child malnutrition nationally, rural/urban, and by state/region, as well as indicators related to the underlying causes of child malnutrition. Stunting prevalence was 29 percent nationally in 2015-16, although this rises to 37 percent for children older than two years who have passed their first 1,000 days of life (Figure 1). Stunting prevalence is higher in rural areas and ethnic minority areas, such as Rakhine, Chin, Kachin, and Kayah states.

Wasting is an acute form of malnutrition and hence less prevalent than stunting, but more strongly associated with child mortality (Olofin et al. 2013). Prevalence of moderate or severe wasting (that is, weight-for-height Z scores less than -2) is 7 percent at the national level. However, many children are mildly wasted ( $-1 < WHZ < -2$ ) and are therefore vulnerable to falling into moderate or severe wasting (Figure 2), while moderate/severe wasting is itself highly prevalent in Yangon region and Rakhine state (respectively 13 and 14 percent).<sup>1</sup> Anemia from all causes is highly prevalent nationally (59 percent).

<sup>1</sup> Measurement of Mid Upper Arm Circumference (MUAC) is also a significant predictor of subsequent mortality in under-five children compared to wasting measured by Weight for Height z-score (WHZ). Here WHZ was preferred over MUAC because the Demographic Health Survey of 2015-16 did not record MUAC. Other survey data suggests that MUAC for age prevalence for children aged 3 to 59 months was the highest in Rakhine state at 1.7 percent followed by Chin state and Sagaing region, both at 1 percent.

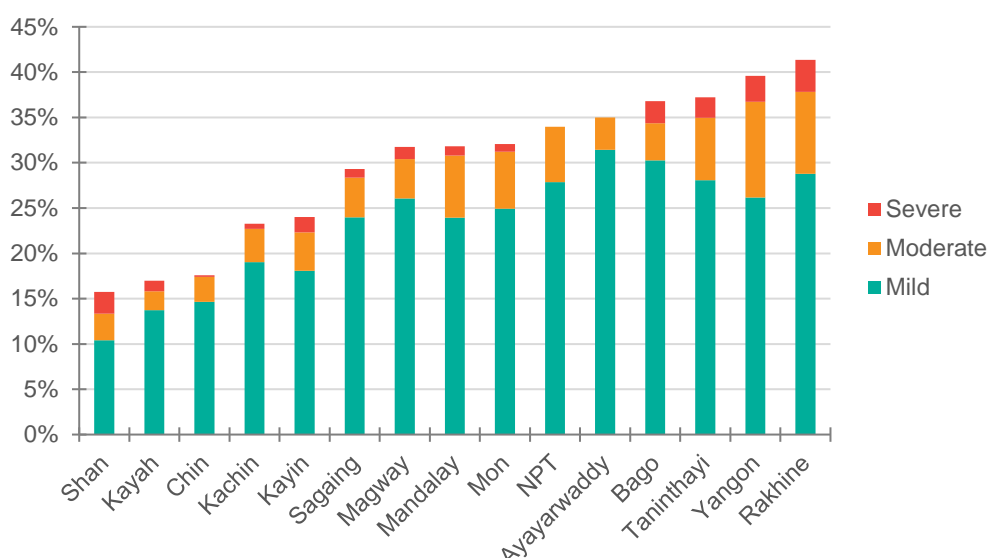
**Table 1. Key indicators for child undernutrition from the 2015-16 Myanmar Demographic Health Survey (DHS), percentage share prevalence rates**

	Nutrition outcomes			Maternal and child health services			Child diet	Maternal nutrition
	Stunting (HAZ<-2) (0-59m)	Wasting (WHZ<-2) (0-59m)	Anemia (<11.0 d/l) (6-59m)	4 or more antenatal care visits (0-23m)	Born at medical facility (0-23m)	All vaccines (6-23m)	Minimum dietary diversity (age 6-23m)	Maternal low BMI (15-49 years)
<b>National</b>	29	7	59	48	72	41	23	12
<b>Urban</b>	21	10	61	79	92	48	32	8
<b>Rural</b>	32	7	59	39	65	39	20	13
<b>Ayeyarwady</b>	37	4	63	39	67	24	21	17
<b>Bago</b>	26	7	55	46	84	47	28	18
<b>Chin</b>	40	3	44	25	62	43	11	8
<b>Kachin</b>	39	4	47	46	75	46	35	9
<b>Kayah</b>	41	3	46	49	64	53	21	7
<b>Kayin</b>	28	6	49	44	62	32	16	9
<b>Magway</b>	26	6	61	46	85	39	30	13
<b>Mandalay</b>	25	8	58	55	93	44	47	15
<b>Mon</b>	30	7	58	49	73	50	12	6
<b>Rakhine</b>	38	13	60	30	36	33	13	15
<b>Sagaing</b>	25	5	72	40	76	51	10	9
<b>Shan</b>	35	5	42	40	50	34	28	7
<b>Tanintharyi</b>	26	9	64	47	76	33	19	13
<b>Yangon</b>	20	13	69	81	86	53	10	8

Source: Authors' estimates from the 2015-16 Demographic Health Survey using survey weights. Results may differ from the official Myanmar DHS 2015-16 statistics due to differences in sample size and other data processing procedures.

Note: m = age in months; HAZ = Height-for-Age z-score; WHZ = Weight-for-Height z-score; BMI = Body Mass Index. Low BMI is defined as BMI < 18.5 kg/m<sup>2</sup>. Prevalence rates for Minimum Dietary Diversity are based on the consumption of at least four of seven food groups in the past 24 hours.

**Figure 2. Prevalence of mild, moderate, and severe wasting in Myanmar in 2015/16, by states and regions**



Source: Authors' estimates from the 2015-16 Myanmar DHS.

Note: Severe wasting is defined as WHZ < -3.0; moderate wasting as WHZ < -2.0 and WHZ > -3.0; and mild wasting as WHZ < -1.0 and WHZ > -2.0. NPT refers to Nay Pyi Taw.

The remaining indicators in Table 1 capture critical maternal and child health services and child's breastfeeding status and dietary quality in the critical first 1,000 days of life from conception to age 2 years. Myanmar's maternal and child health and nutritional care has made progress in recent

years, but coverage of key services is still very low in large parts of the country. In both antenatal and neonatal care there are huge rural-urban disparities, while 51 percent of the infants from birth to 6 months are exclusively breast fed and less than half of children aged between 6 and 59 months received all the recommended vaccines.

Dietary diversity of children is also very poor. Minimum dietary diversity refers to whether a child aged between 6 and 23 months consumed at least four of seven possible food groups in the past 24 hours. Dietary diversity has been shown to be predictive of nutrient intake (FANTA 2006) and lower risk of stunting (Arimond and Ruel 2006). Nationally only 23 percent of all children (breastfed and non-breastfed) achieved a diverse diet. Diets in most urban areas are more diverse, but Yangon region is a major exception with just 10 percent of children consuming a more diverse diet. This suggests children in poor urban households – who have likely been hit hard by the COVID-19 economic crisis – may be particularly vulnerable to further dietary deterioration.

The causes of poor diets and such limited access to or utilization of maternal and child healthcare are varied. Low levels of income and poverty are closely associated with stunting, especially. A forthcoming IFPRI study finds that improvements in wealth (proxied by housing quality) has been the major driver of stunting reduction in Myanmar over the period 2000 to 2015, along with improved access to water (Headey, Cho, and Goudet forthcoming). Specifically, the difference in stunting risk between the poorest and richest households is around 20 percentage points.<sup>2</sup>

Income and wealth influence nutrition in multiple ways. Richer households can afford to buy a more diverse diet. A recent IFPRI and Michigan State University study found that only about half of Myanmar's population could afford to buy a nutritionally recommended diet in 2015, in part because some of the most nutritious foods – fruits, vegetables and animal-sourced foods – are expensive sources of calories relative to rice and other starchy staples (Mahrt et al. 2019). But income also helps with non-food expenditures. Expenditures on health; housing; and water, sanitation, and hygiene (WASH) can influence prevention and treatment of infectious diseases and lead to reduction in all forms of malnutrition, e.g., wasting, stunting and anemia. Poor nutrition is very much the outcome of multi-dimensional poverty, reflecting household circumstances as well as community-level deprivations in access to nutritionally essential services.

Consistent with this hypothesis, many of the region and states with the worst rates of malnutrition in Table 1 have poor access to health services, WASH infrastructure, and social services, but are also highly vulnerable to natural disasters, ethnic discrimination, and conflict, with nutritional deprivations across multiple generations related to widespread chronic poverty (MoHS and ICF 2017). Several have high populations of internally displaced persons (IDP), stateless people, or crisis-affected vulnerable people – 986,000 people in total (HRP 2020). Stunting prevalence is high among all IDP and stateless populations, but, as with the national results, wasting prevalence among IDP and stateless populations is especially large in Rakhine, with wasting rates for under-fives varying between 15 and 20 percent. An estimated 362,000 children and 332,000 women were in need of humanitarian assistance across Myanmar before the COVID-19 pandemic (HRP 2020). UNICEF and partners are supporting the Ministry of Health and Sports (MoHS) with ready-to-use therapeutic food and ready-to-use supplementary food for integrated management of acute malnutrition in Rakhine, Chin, and Magway (UNICEF 2020). During the COVID-19 crisis, efforts have been deployed to maintain the minimum package of nutrition services, including infant and young

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<sup>2</sup> The approach used in this study was the regression decomposition methods developed by Headey et al. (2015). Using this method, the determinants of stunting are explored using pooled regression models and then the regression coefficients are used to estimate predicted changes over time due to different factors. The forthcoming study on Myanmar by Headey, Cho and Goudet looked at a number of factors, including household wealth (housing quality), maternal education, basic indicators of access to healthcare, improved water and sanitation, and household demographics. Apart from household wealth, access to improved water and close proximity to safe drinking water were strong predictors of reduced risk of stunting.

child feeding support and micronutrient supplementation for both children under five and pregnant and lactating women.

## Potential impacts of the COVID-19 economic crisis on maternal and child nutrition

Given the importance of household income or wealth for child malnutrition, any decline in incomes resulting from COVID-19 can be expected to increase the risks of different forms of malnutrition. Until recently, published studies on income and nutrition have almost solely focused on the longer-term effects of economic growth on stunting. But while COVID-19-related income losses could indeed affect stunting, this process will likely take place over several years. The more immediate impacts are likely to be on weight loss among children, as well as mothers (which in turn could increase risks of birth complications and poor health outcomes at birth, such as low birthweight).

A recent IFPRI cross-country study used data from 1.256 million children in 52 countries that implemented Demographic Health Surveys between 1990 and 2018 to study the risks that economic contractions pose for risks of child wasting, disease (proxied by diarrhea and fevers), child dietary diversity, and low maternal BMI (Headey and Ruel 2020). It was found that lagged annual changes in national income per capita are significantly associated with changes in mild, moderate, and severe wasting, and that the effects are relatively large. For example, a 10 percent reduction in national income predicts a 22 percent increase in severe wasting prevalence (WHZ<-3), a 14 percent increase in moderate/severe wasting (WHZ<-2) and a 7 percent increase in any form of wasting (WHZ<-1). In addition, even after controlling for growth impacts, the researchers found that antenatal care, neonatal care, and vaccinations (as defined in Table 1) all predict lower risks of mild, moderate, and severe wasting. This makes sense as nutrition services are typically integrated in ante-natal care, vaccination, or community-based platforms.

In Table 2 we use the Headey and Ruel (2020) estimates to assess potential impacts of the COVID-19 crisis on wasting in Myanmar. We model two routes of impact. First, we use the predicted economic growth impacts of the COVID-19 economic crisis produced by a previous IFPRI study by Diao et al. (2020). Specifically, we use their “slow recovery” scenario on the grounds that there are significant risks of a second phase of infections and a lockdown response. This scenario predicts an annual economic growth rate of -2.2 percent compared to the 6.4 percent rate expected without COVID-19. The second route of impact assumes a 10-point reduction in the delivery of essential maternal and child health services on the grounds of interruptions to service delivery as well as weakened demand for these services due to fear of infection.

The 8.6-percentage point reduction in the economic growth rate could be expected to increase the prevalence of any form of wasting by 1.93 percentage points, while the 10-point reduction in essential health services adds a further 0.55 points, summing to a 2.5 percentage point increase in any form of wasting (Table 2). The predicted increases in moderate and severe wasting are 0.86 points and 0.56 points respectively. In total, these scenarios predict 111,761 children could become wasted because of the joint economic and health crisis, including 38,600 moderately wasted and 25,057 severely wasted, with greatly increased risk of mortality before their fifth birthday. For programmatic purposes, this would result in an annual caseload of 65,148 children that will need to be treated for severe acute malnutrition (Figure 3).<sup>3</sup>

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<sup>3</sup> 25,057 \* 2.6 = 65,148 based on a 2.6 factor to estimate the new cases over a one-year period (CMAM 2012)



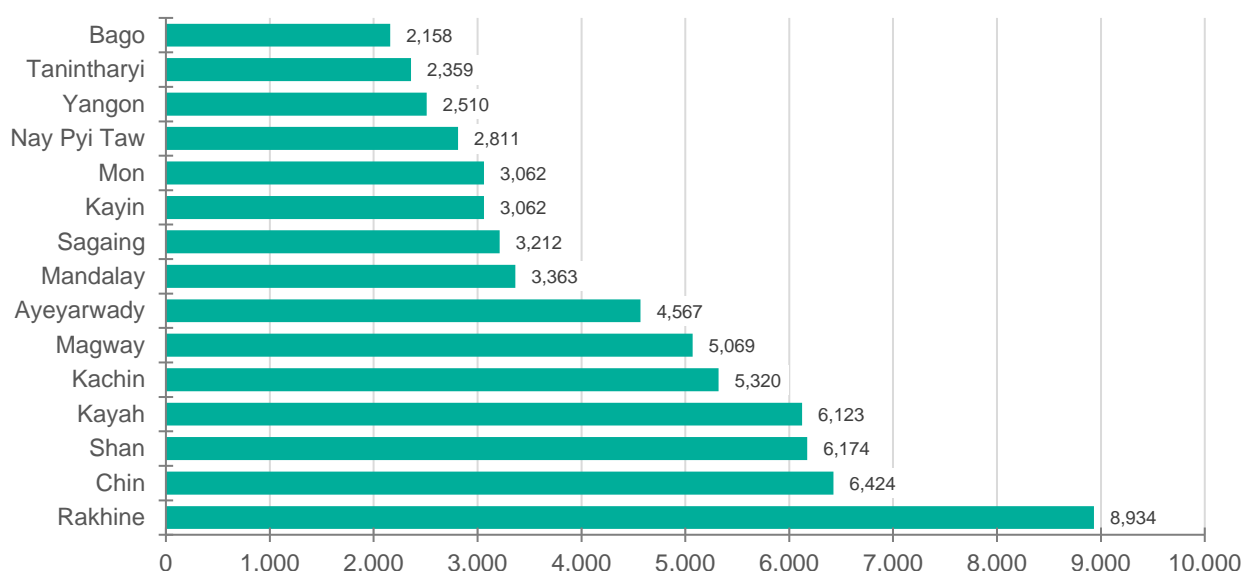
**Table 2. Potential impacts of the COVID-19 economic crisis in Myanmar on the prevalence of various form of child wasting and estimated numbers of wasted children under five years of age**

		Specific categories of wasting			
		Any wasting (WHZ<-1)	Mild wasting (-2<WHZ<-1)	Moderate (-3<WHZ<-2)	Severe wasting (WHZ<-3)
<b>Pre-COVID wasting situation (2015-16)</b>					
1	Pre-COVID-19 wasting prevalence among children 0-59 months, percent	31.59	24.56	5.47	1.56
2	Pre-COVID wasted children 0-59 months, number	1,424,238	1,107,413	246,602	70,223
<b>Change in wasting prevalence (percent) due to:</b>					
3	8.6-point decline in national income	1.93	0.92	0.67	0.35
4	10-point reduction in essential maternal and child health services	0.55	0.15	0.19	0.21
5	Both economic and health impacts	2.48	1.07	0.86	0.56
<b>Post-COVID wasting situation (2020-21)</b>					
6	Post-COVID wasting prevalence among children 0-59 months, percent	34.07	25.63	6.33	2.11
7	Newly wasted Myanmar children, number	111,761	48,104	38,600	25,057
8	Additional caseload for treatment, number*				65,148*

Notes: Authors' estimates based on elasticities between various forms of wasting and economic growth derived by Headey and Ruel (2020) in a cross-country study using Demographic Health Surveys conducted between 1990 and 2018. An implicit assumption here is that income changes are similar across states and regions.

\* Based on newly wasted Myanmar children multiplied by 2.6 factor to reflect new cases over a given time period.

**Figure 3. Estimated additional caseload of severe acute malnutrition among children under five years of age due to the COVID-19 economic crisis in Myanmar, by state/region**



Notes: This estimate is based on newly wasted Myanmar children from the cross-country model derived by Headey and Ruel (2020) multiplied by a 2.6 factor to reflect estimates for new cases over a given time period. An implicit assumption here is that income changes by state/region are similar across states.

In addition to wasting, the multi-country model predicts increased risks of low BMI for women of child-bearing age – an 8.6 percentage point reduction in the growth rate of national income would increase low BMI prevalence by 0.9 percentage points, or about 112,000 women aged 15 to 49 years. In addition to these effects on weight measures, it is highly likely that COVID-19 will increase micronutrient deficiencies in the short to medium term (as discussed below) as well as child stunting in the next few years, especially if the economic impacts of COVID-19 are prolonged. However, there

is currently insufficient evidence to make projections of micronutrient deficiencies or stunting impacts.

### **Potential impacts of the crisis on dietary quality**

One of the main mechanisms through which the COVID-19 economic crisis will affect nutrition is through declining dietary quality, which could adversely affect levels of stunting, wasting, and micronutrient deficiencies. In general, people work hard to maintain adequate calorie intake even in the face of severe income shocks in order to avert hunger and keep energy supply for daily activities. Hence, although incomes losses could lead to insufficient calorie intake in the very worst circumstances, the more usual response to an economic shock is for households to prioritize purchasing foods that are calorie-dense but which contain few micronutrients or high-quality proteins and fats (e.g. rice), resulting in a decline in dietary quality.

The most compelling evidence that income losses reduce dietary quality comes from the 1997/98 Indonesian financial crisis, when real wages fell by 33 percent between August 1997 and August 1998 on the back of rising unemployment and food prices. Strikingly, even as rice prices rose by almost 200 percent, rice consumption actually increased as rice remained a much cheaper source of calorie compared to fruits, vegetables, and animal sourced foods (Headey and Ecker 2013, Headey et al. 2014). Similarly, a high-frequency nutritional surveillance study that collected 14 rounds of data in Java between 1995 and 1997 also showed dramatic declines in egg, meat, and vegetable consumption (Block et al. 2004). That same study also observed a sharp rise in the prevalence of child anemia, rising from a pre-crisis rate of 52 percent to 68 percent at the peak of the crisis.

Consistent with these findings, the aforementioned global study by Headey and Ruel (2020) examined impacts of economic growth on child diets using minimum dietary diversity (MDD), with a threshold of adequate MDD being the consumption of at least four of seven food groups in the past 24 hours. They found that a 10-point decline in national income would predict a 20 percent decline in the prevalence of children consuming a diet that was adequately diverse. This implies that MDD prevalence in Myanmar would fall from 23 percent prior to COVID-19 to 18.5 percent afterwards.

This estimate relates only to income effects, but the COVID-19 economic crisis could also affect nutrition through disruptions to supply chains for nutrient-rich foods. Most nutrient-rich foods are highly perishable, resulting in fragile supply chains. Breakdowns in any part of the supply chain – the farm, traders, transporters, processors, retail – can disrupt the whole chain. Early on in the COVID-19 crisis, IFPRI collected evidence of significant disruptions to the livestock sector in China (Xhang 2020) and to value chains for fruits and vegetables in Ethiopia (Tamru et al. 2020). A USDA survey of the livestock sector in Myanmar found severe and wide-ranging impacts on the livestock sector (Aung 2020), and there have certainly been disruptions to agricultural exports. However, perhaps because of declining demand for high-value foods, domestic food prices have remained relatively stable, and there is no evidence of wide-ranging food shortages.

In addition to these potentially severe deteriorations in household and child diets, there are additional nutritional risks for mothers and young children related to disruptions to imports of vitally important nutritional products, including micronutrient supplements and micronutrient-fortified products used to prevent and treat micronutrient deficiencies or acute malnutrition. Moreover, the production and distribution of fortified rice to vulnerable groups might have been impacted by the crisis.

Finally, while not yet well documented, there are significant concerns among local experts regarding changes to breastfeeding practices due to uncertainty about potential transmission of



COVID-19 from lactating mothers to their infants. This is yet to be well documented, but a forthcoming IFPRI food security survey will shed some light on whether mothers have altered breastfeeding behaviors in this regard.

### Impacts of COVID-19 disruptions to maternal and child health services

Mothers who are pregnant or taking care of young children are obviously vulnerable to COVID-19, and there is indeed some direct risks to newborns and young children with other health conditions. But it is likely that the indirect effects of COVID-19 on healthcare systems will have much greater consequences for maternal and child health. In principle, lockdown protocols in Myanmar have not prohibited health-related travel, but it is likely that healthcare providers and their clients have been less willing to travel for non-emergency check-ups or preventive care. In addition, health care services were affected with most health care providers shifting to a COVID-19 response. Today, maternal and child health and nutrition services are resuming, with some delays in implementation as new standard operating procedures are being put in place.

Evidence on the impacts of COVID-19 on provision of public maternal and child health services comes from surveillance data reported by the Ministry of Health and Sports (MoHS). Table 3 reports coverage of antenatal care registration, immunization of pregnant mothers, and immunization of young children for April and May 2020 relative to January 2020 prior to any COVID-19 restrictions. There was a sizable reduction in antenatal care registration in April, but recovery in May to normal levels of registration. However, immunization for tetanus-diphtheria during pregnancy fell dramatically in April, with very limited recovery in May. This suggests that many antenatal care visits were cancelled or postponed. Likewise, child vaccinations were temporarily suspended in April and May following the MoHS announcement on 1 April 2020 to stop vaccination services.

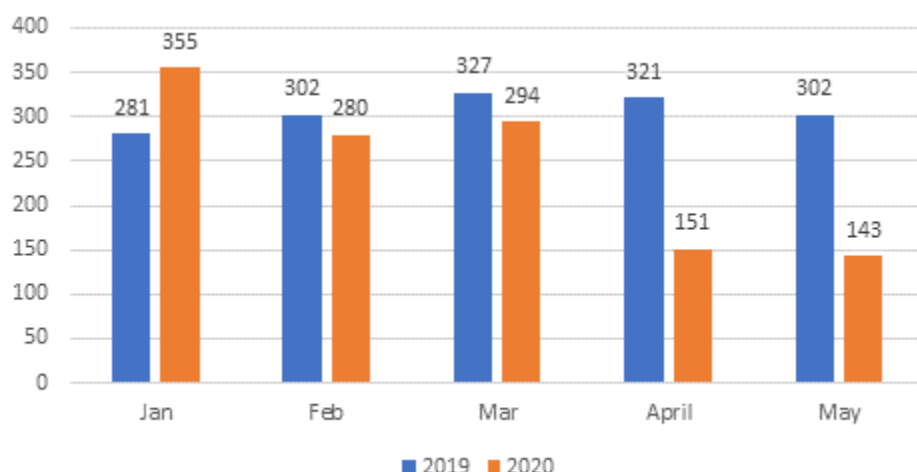
**Table 3. Levels of antenatal registration and maternal and child immunization in April and May as a percentage of January 2020 levels, percent**

	April	May
Pregnant mothers newly registered for antenatal care	73.5	97.1
Pregnant mothers immunized with tetanus-diphtheria	3.1	11.5
Immunized children	3.5	4.7

Source: MOHS (2020).

The findings in Table 3 are limited in scope, but they raise serious concerns about a broader range of disruptions to essential maternal and child health and nutrition services, including delivery of antenatal iron folic acid or multiple micronutrients supplements during pregnancy, child vitamin A supplementation, distribution of oral rehydration salts and zinc for diarrhea (although MOHS data suggest this is unaffected), therapeutic food for home treatment of acute malnutrition, and in-person consultations for treatment of acute malnutrition. Specifically, life-saving services for severe acute malnutrition admissions were suspended by implementing organizations in Rakhine after the 23rd March case of COVID-19 was declared (Figure 4) (UNICEF 2020 unpublished). The reason for doing so was to ensure infection prevention and control measures were in place before resuming services. This protocol followed the guidance note developed by the nutrition sector. With services now resuming, the two months gap in treating severe acute malnutrition might have worsened what was an already alarming situation.

**Figure 4. Comparison of severe acute malnutrition admissions in Rakhine between January and May 2020 compared to 2019**



Source: Nutrition in emergency sector (2020)

Note: Admissions are for total population, both Internally Displaced Persons (IDP) and non-IDP.

More indirect, but equally severe, is the risk that combating COVID-19 imperils regular but life-saving efforts to prevent and treat malaria, diarrhea, and other infectious and tropical diseases. In Myanmar, these imperiled efforts coincide with the monsoonal rains, a season in which the incidence of tropical infectious diseases and acute malnutrition rise steeply even in a normal year. In 2020, the perfect storm of eroded basic health care, unsanitary living conditions, declining dietary quality, and heightened seasonal risk of infectious disease will mean that many thousands of children in Myanmar are in danger of life-threatening disease and malnutrition.

### How can we protect vulnerable groups?

Policymakers and researchers alike are operating in a unique state of uncertainty. It is therefore critical to strengthen and broaden multisectoral nutrition coalitions to ensure that actors in different sectors work as effectively as possible to prevent a full-blown nutritional crisis in Myanmar. It is more critical than ever that agencies identified in the Multisectoral National Plan of Action on Nutrition (MS-NPAN) set forth key actions to protect nutritionally vulnerable groups, with many of these actions also contributing to poverty reduction. These include:

**Expand and adapt social safety net programs to improve dietary quality, not just quantity, to nutritionally at-risk populations.** It is critical for policymakers in all sectors to realize that the primary channel through which the COVID-19 crisis will affect nutrition and health in Myanmar is through income losses, which are severe and widespread across both urban and rural areas and different states and regions (Diao et al. 2020).

Prior to COVID-19, Myanmar was scaling up a Maternal and Child Cash Transfer (MCCT) program that already is in place in five states (Chin, Rakhine, Kayin, Kayah, and Naga Self-Administered Area) to Shan and Ayeyarwady. An earlier evaluation had found the program to have beneficial impacts on stunting, contributing to a reduction in prevalence among children in beneficiary households from 30 to 26 percent over three years (IPA and Save the Children 2019). The government and its development partners must accelerate the scale-up of the MCCT program and look to make it a national program in the near future, prioritizing poor urban populations. Adaptation of the current program is also needed to ensure that it reaches nutritionally at-risk groups, prioritizing Yangon region and Rakhine state, which have the highest prevalence of wasting, and undertaking nutrition-sensitive actions to guarantee maximum impact on nutrition.

Beyond the MCCT, the government needs to quickly put in place other social protection programs to mitigate the short to medium terms income losses from COVID-19 and to use this opportunity to create a sustainable and well targeted social protection system for the longer term. Compared to other low- and middle-income countries more advanced on the development of social protection systems, Myanmar was relatively unprepared to implement large-scale social protection in the wake of such a severe economic shock.

**Keep agri-food systems functioning.** As a previous MAPSA policy note argued (Headey 2020), it is critical to let farmers farm, traders trade, input dealers deal, and sellers sell, even if they operate informally. Certainly, it is important to implement social distancing and improved hygiene measures along each value chain, but it is also necessary to keep domestic and international food markets working to limit damage to diets, to the incomes of workers employed in those value chains, and to the agri-food system as a whole. Evidence to date suggests there has already been significant disruptions to many parts of the food system. Consequently, it is important that the government of Myanmar allow free flows of all food system inputs and outputs and to proactively make sure that food system agents have adequate access to credit, labor, input and output markets, and the support needed to implement appropriate social distancing and hygiene to prevent spread of COVID-19. Such efforts are in line with Action 2.1.7 of the COVID-19 Economic Response Plan of the government of Myanmar, which is to support farmers, small agri-processors, seed farmers, and agri-businesses for planting and income retention.

**Facilitate food system innovations to make it more resilient to COVID-19.** Given that social distancing and mobility restrictions may be in place for many months, government agencies, development partners, and microfinance institutions should search for ways to stimulate innovative food delivery practices, especially those that create jobs. The private sector has already been very adaptive in urban areas, with many food retailers scaling up their online transactions through Facebook and other online platforms. But these private sector initiatives favor more formal firms with greater financial and human capital and a sizable urban consumer base. It is important to find ways to improve online access for more informal firms and those working further upstream in farm production and rural marketing.

**Support enhanced homestead food production to increase access to nutrient-rich vegetables, fruits, and eggs in order to improve diet quality.** These programs are consistent with social distancing, can use surplus household labor (especially in 2020 when alternative employment is limited), and can generate both income from sales and improved nutrient intake for farming households (Iannotti et al. 2009; Olney et al. 2015). While these programs are normally implemented by non-governmental organizations, research from Ethiopia shows that they can be implemented at scale by government extension workers, provided that farmers have adequate access to water (Hirvonen and Headey 2018).

**Find innovative ways to stimulate demand for nutrient-rich foods.** National leaders and the national media must urge the Myanmar population to keep consuming protective affordable nutrient-rich foods. In much of Myanmar there is a misperception that a healthy diet primarily relies on high intakes of rice, when a diverse array of fresh fruits, vegetables, and animal sourced foods is the essential basis for good nutrition, especially for young children that can only eat limited amounts of food. Mobile phone messaging and online platforms, such as Facebook, could be used to stimulate demand for these foods. Such channels can also be used to encourage appropriate infant and young child feeding practices, including optimal breastfeeding and dietary diversity. Production and distribution of locally produced fortified rice can be scaled up and targeted to vulnerable groups hit particularly hard by the crisis, e.g., garment sector.

**Prevent the collapse of basic maternal and child health services.** Myanmar's health system has thus far managed the COVID-19 health crisis exceptionally well after a slow start. But it must now also find ways to maintain basic preventive and curative health services, especially for mothers and young children. Key challenges on this front are to make these services COVID-safe, perhaps through remote consultations and nutrition counselling using cell phones, when viable, through COVID-19-safe home visits and delivery of essential medications and supplements or counselling, and through increasing access to protective equipment for all health workers. Development and promotion of the use of virtual learning could be accelerated to build capacity. Such efforts could build on existing initiatives, such as the hotlines for counselling on maternal, newborn, and child health and on infant and young child feeding.

**Integrate infection prevention and control, WASH, and nutrition, urgently.** WASH programs are a win-win for preventing contagion of COVID-19 and other infectious diseases that affect maternal and child health and nutrition. Forthcoming IFPRI research shows that access to improved water (less than 30 minutes collection time) is a strong predictor of improved child nutrition outcomes (Headey et al. 2020). Populations in Myanmar still face difficulties in having sufficient water. Interventions aiming to increase safe storage of water and access to water should remain top priorities. During the COVID-19 crisis, the objective should be to expand the operation schedule for safe water points to ensure social distancing.

Areas in which infection prevention and control, WASH, and nutrition can be better integrated include in the joint identification and support of health facility and nutrition services that have gaps in WASH services. Other areas of integration can be in the training of outreach workers for conducting risk communication and community engagement and to build their competencies to improve WASH practices and appropriate treatment of sick children within communities. Myanmar has already substantially increased access to handwashing stations in communal places. This effort must be sustained along with aggressive messaging on the importance of regular handwashing and other hygienic practices. Public announcements and mobile messaging can raise knowledge and nudge individuals into more hygienic practices.

**Ramp up support for the integrated management of acute malnutrition.** This entails improving the monitoring and surveillance of vulnerable populations to assess the emergence of severe acute malnutrition (SAM), including newly vulnerable populations where wasting may not typically be prevalent. Evidence presented above suggests that over 100,000 additional children could become wasted in 2020 and 2021 with an additional caseload of over 65,000 children with severe acute malnutrition and a similar number of women of reproductive age could become underweight. It is critical to make sure that all responsible agencies have all the resources needed to deal with an additional SAM caseload of this magnitude, including for surveillance and testing, as well as prevention and treatment.

**Protect women and children.** Economic stress and social distancing will increase the risk of domestic violence and psychosocial stress. Both nutrition-specific and nutrition-sensitive interventions, e.g., social protection and microfinance, need to prioritize support to women. Novel ways to provide individual and community support in the context of prolonged social distancing should be explored. As a recent MAPSA policy note indicates, it is critical to ensure that the full range of responses to the COVID-19 crisis is gender-transformative, including in the selection of public investments, social protection initiatives, microfinance, information campaigns, and support against domestic or gender-based violence (Lambrecht et al. 2020).

**Set up or scale up food and nutrition security surveillance systems.** One troubling aspect of the current economic crisis in Myanmar is that so little is known about the scale of impacts on different communities in a highly diverse country. This has led to a massive push to implement rapid-

response phone surveys by a wide range of agencies,<sup>4</sup> as well as a number of economywide simulation studies, such as Diao et al. (2020). It is critical that policy responses and investments by development partners be closely informed by these surveys to improve the targeting and design of appropriate policy responses to the COVID-19 crisis.

However, over the medium to longer term, Myanmar and its development partners should also plan to set up more permanent surveillance systems – as described in Barrett and Headey (2014) and Headey and Barrett (2015) – to monitor household welfare, to gauge emergent threats to livelihoods, and to assess the impacts of a wide range of shocks related to a range of infectious diseases, economic shocks (e.g. restricts on exports to China), climate change and other agro-ecological shocks, such as crop and livestock diseases (e.g. Fall Army Worm, locusts). More permanent surveillance systems capturing high frequency data over a diverse range of communities and agri-food system actors would constitute a highly effective means of improving preparedness for a wide range of complex crises. If COVID-19 has taught us anything, it is to prepare better for low-frequency but large-impact shocks. Surveillance systems are a crucial component of greater preparedness.

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<sup>4</sup> A cataloging of surveys implemented by different agencies conducted by MAPSA and USAID identified 31 phone or web-based surveys as of June 2020.

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