

1 **Long-term impact of West African food system responses to COVID-19**

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50 **The COVID-19 pandemic continues to impact health and livelihoods in West Africa.**
51 **Exposure of food system fragilities by the pandemic presents the opportunity for**
52 **regional-specific reforms to deliver healthy diets for all and promote resilience to future**
53 **shocks.**

54

55 Long-term impacts of the COVID-19 pandemic on food systems may well be most heavily
56 felt in low- and middle-income countries with fragile health systems and economies.

57 Although West Africa has so far been spared the worst of the pandemic in terms of infection
58 rates, severity of disease and mortality¹, the World Bank estimates that in Nigeria alone, the
59 largest economy in the West African region, 5 million people may become impoverished due
60 to COVID-19². Furthermore, the Permanent Interstate Committee for Drought Control in the
61 Sahel (CILSS), estimates that the 51 million people who face food stress are likely to fall into
62 food crisis without adequate income support³.

63

64 Government responses to the pandemic have been broadly similar across West African
65 countries⁴. Almost all have implemented curfews, travel restrictions, and some have imposed
66 lockdowns in urban areas – albeit with a gradual easing of restrictions as populations become
67 weary of government-imposed restrictions. Limited attention, however, has been given to the
68 impact these measures have on the ability of governments to ensure safe and timely
69 agricultural production, continue international agricultural trade, and secure access to healthy
70 diets for all people. Previous epidemics in the West African region, such as the 2013-2016
71 Ebola outbreak, provided evidence of the relative fragility of food systems in the region. In
72 the three countries most affected by the Ebola outbreak, Guinea, Sierra Leone and Liberia,
73 more than 40% of regular farming lands were left uncultivated and the price of cereals such
74 as rice increased by over 30%⁵. It is noteworthy that the 2020 climatic conditions in the
75 region are predicted atypical, but favourable – above-normal total rainfall, earlier onset and
76 later cessation of rainfall⁶ – that would in normal circumstances provide a unique opportunity
77 for a productive harvest.

78

79 **Food system fragilities**

80 The unfolding COVID-19 pandemic may pose unique challenges for West Africa. The
81 agricultural workforce already has a relatively poor nutritional and health profile, and further
82 pandemic-related ill health could reduce labour productivity during the busy planting and

83 harvest seasons. Rural farming communities typically have little to no savings or food stores
84 and many depend on daily-generated income for food⁷. Interruptions to day-wages and
85 unexpected health expenditures may force households into poverty. The impact of
86 lockdowns, market closures, and potential restrictions on regional and international food
87 trade have likely impacted food prices – rises between 11% and 17% in cereals, especially
88 imported rice are observed in Nigeria, Sierra Leone and Liberia³. These measures have
89 particularly affected pastoralists and nomadic livestock herders, interrupted value chains,
90 reduced access to seeds and other on-farm labour availability based on the agricultural
91 calendars in the region⁸. Furthermore, the likely lengthy delays and significant competition in
92 defining new trade agreements including the African Continental Free Trade Area (AfCFTA)
93 Agreement are projected to put West African food systems under significant additional
94 stress⁹. Of particular concern are supplies of nutritionally important but relatively perishable
95 fresh fruit and vegetables¹⁰. Approximately 7 million school children in West Africa benefit
96 from school feeding programmes¹¹, and for many households, these meals cover an important
97 part of household food supply. School closure due to pandemic restrictions will increase
98 pressure on family food supplies as children do not receive free school meals and parents stay
99 at home for childcare¹². The pressures of the pandemic fall on top of the existing strains from
100 increased frequency and severity of droughts and extreme heat in West Africa, and in
101 particular the Sahel region. In 2010 and 2012 Sahelian droughts caused widespread crop
102 failure and left many households food insecure in Mauritania, Mali, Chad, Niger and Burkina
103 Faso¹³.

104

105 **Support for governments**

106 International organisations including the International Monetary Fund (IMF), International
107 Fund for Agricultural Development (IFAD), the African Development Bank (ADB) and the
108 World Bank (WB) have all made major funding commitments and are supporting
109 governments in the region in the fight against COVID-19. This provides policy context
110 conducive to food system reforms that were unthought of pre-pandemic and are now
111 increasingly important to guard against the potentially devastating impacts of future
112 pandemics and other shocks. We propose a number of policy options to support resilience
113 and sustainability of West African food systems in the post-COVID-19 era where “surprise is
114 the new normal”¹⁴.

115

116 ***Investments and partnerships***

117 Though many of the commitments from regional and international donors and development
118 partners are aimed at reducing food insecurity and impoverishment in the short-term, they
119 offer governments the opportunity to increase investments in agriculture that can co-deliver
120 long-term benefits. The ADB recently announced USD 10 billion in support for African
121 economies to safeguard against food insecurity impacts of the COVID-19 pandemic¹⁵. The
122 programme prioritizes agricultural policies that support the most vulnerable through
123 investments in farm inputs for food production and strengthen the capacity of regional
124 organisations for food security. However, three months after this announcement, it has yet to
125 become clear whether the substantial budgetary allocation for COVID-19 related food
126 insecurity by the ADB could have negative consequences for other sectors receiving funding
127 from the bank. Furthermore, there may be unforeseen consequences of this increase in
128 funding that in turn could jeopardise future food security for other disadvantaged population
129 groups. IFAD's Rural Poor Stimulus Facility programme aims to mobilise USD 240 million
130 to improve food security by supporting production (inputs and basic assets for crop, livestock
131 and fisheries), access to markets, targeting funds for rural financial services and use of digital
132 services for weather and market information delivery¹⁶. While these programmes may have a
133 short-term focus, opportunities exist to achieve longer-term impacts, for example through
134 expansion of input support to include seeds that have a greater resilience in the face of future
135 climate change (climate-smart crops) that farmers could continue to grow after the immediate
136 support period ends. Strengthening public-private partnerships, and use of innovative funding
137 models¹⁷, may also provide an opportunity to ensure programmatic and financial
138 sustainability. The pandemic has resulted in a rebalancing of funding streams in the
139 development community that may have negative impacts on other sectors; the balance is
140 likely to shift again post-pandemic. Therefore, it is important to re-strategize current food
141 system investments now to ensure that they have a lasting impact.

142

143 ***Innovation***

144 West Africa's abundant supply of sunlight and agriculturally-underutilised land (in mostly
145 rural settings) is ripe for development – including rural development opportunities¹⁸ that
146 improve food safety, reduce post-harvest losses and food storage to raise productivity for
147 farmers; with appropriate infrastructural planning and mandated safeguards to protect nature.
148 Modern agricultural approaches, including urban farming of vegetables and novel foods

149 including mycoproteins, insects for animal and human consumption and cellular agriculture¹⁹
150 are expanding rapidly with the potential for acceptability testing and adoption. Supporting
151 these new approaches may provide multiple benefits including urban and peri-urban food
152 production (with clear employment opportunities for growing urban populations) and
153 strengthening important food supply chains. Peri-urban food production has many potential
154 benefits including shorter supply chains that may be particularly useful during infection
155 control enforcement, income generation possibilities, and opportunities for the greater
156 engagement of women²⁰. Governments should design ‘smart’ agriculture insurance
157 programmes which can reduce inefficiencies and be cost effective in supporting agricultural
158 investments²¹. The conversion of urban and peri-urban waste into fertilizer²² to support food
159 production (with the potential to reduce environmental pollution in cities and prevent
160 infectious diseases) could be a ‘low-regret’ option to consider. Despite the many expected
161 benefits of food system expansion, decision-making on how and to what extent to expand
162 production should be based on a full evidence map of potential benefits and trade-offs. While
163 successful urban production can efficiently complement rural production²³, the possibility to
164 reduce the demand of similar products from rural farmers needs consideration. Furthermore,
165 the expansion of agricultural land could bring several environmental risks, including
166 substantial negative impacts on biodiversity and deforestation. The West Africa’s experience
167 with Ebola virus and its link to agricultural land conversion²⁴ makes it important to plan
168 production to minimize zoonotic spill-over and protect the territorial rights of indigenous
169 communities.

170

171 ***Reconfigure trade policies***

172 Border restrictions due to COVID-19, even though food is often exempted, have disrupted
173 food trade flow and the movement of livestock herders in West Africa especially for informal
174 trade that represents a substantial amount of total trade in the region²⁵. Food trading
175 arrangements need to consider both the financial and environmental costs of food production.
176 International trade is a potent strategy for ‘spreading risk’, providing a buffer for regions
177 exposed to climate change and severe local disruptions (such as during regionalised
178 outbreaks). However, long supply chains (inter-regional/continental) may become
179 unsustainable during a severe shock when major food supplying countries adopt a
180 protectionist approach to trade, limiting exports to dependent countries. Trade policies should
181 be reconfigured in a balanced approach, dispersed enough to avoid major disruption in supply

182 in cases of localised harvest failure, but also optimized to consider multiple impacts including
183 on subsidies, taxes and the environment (such as embedded environmental footprints).

184 ***Early warning systems***

185 An integrated system which combines existing systems that monitor food prices, crop
186 diseases, weather patterns and other environmental changes is needed to support efforts
187 already made in the region to improve early warning. Local, national and regional
188 communication could be improved with better, integrated early warning/notification systems
189 – which are even more crucial with border closure measures in place, as the current COVID-
190 19 border closures has made it more difficult to address and mitigate agricultural pests²⁶. A
191 systemic and structurally-designed regional early warning system for pests and diseases such
192 as locusts and fall armyworm through strengthening the capacity of institutions and
193 organisations in the region such as CILSS and the ECOWAS trade department will enable
194 systematic and sustainable data collection and analysis for better preparedness. Functional
195 early warning systems can help countries to take early steps to protect lives and livelihoods
196 when a pandemic or other crisis strikes²⁷.

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198 ***Healthy agricultural workforce***

199 There are clear opportunities to strengthen occupational health in primary care protocols and
200 enhance protection for subsistence farmers from the health effects of climate change,
201 including intense heat and dehydration²⁸. Accelerated access to Universal Health Coverage
202 particularly by the most vulnerable (women and children) could improve health. One way to
203 ensure quick assessment and for support during future disruptions is by using mobile phone
204 technology. The technology has already aided governments and support services to identify
205 vulnerable populations and simplify the administrative barriers to access support services²⁹.
206 Mobile phone technology can be used to deliver personalised agricultural advice to small-
207 scale farmers and vulnerable groups when access or physical contact is restricted as we see
208 during the COVID-19 pandemic.

209

210 **Conclusion**

211 These strategies and policies underscore the extent to which the environment, food systems
212 and public health are intimately intertwined while this linkage will only become stronger
213 under projected climate and environmental change³⁰. Food system policy should consider and

214 carefully map out the possible trade-offs to other parts of the system which would require a
215 coordinated intersectoral government effort.

216

217 The COVID-19 pandemic is having a devastating global impact and all sectors of society are
218 considering how to manage the immediate impacts and rebuild in the future. Building back a
219 stronger, resilient and more environmentally-conscious food system is critical both to ensure
220 greater preparedness for future crises, but also to improve the environmental, nutritional and
221 health outcomes of West African food systems in the future.

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240 ZA, RG and PFDS conceived the study. ZA, RG, SM, ADD and PFDS performed the
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245 **Competing interests**

246 The authors declare no competing interests.

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