



**ZANZIBAR'S DRACONIAN
SEED LAW IN THE OFFING**
**CASE STUDY OF UNABATED
CORPORATE EXPANSION
AND CONTROL OF AFRICA'S
SEED SYSTEMS**



**AFRICAN CENTRE
FOR BIODIVERSITY**

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The African Centre for Biodiversity (ACB) is a research and advocacy organisation working towards food sovereignty and agroecology in Africa, with a focus on biosafety, seed systems and agricultural biodiversity. The organisation is committed to dismantling inequalities and resisting corporate industrial expansion in Africa's food and agriculture systems.

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ABBREVIATIONS

ACB	African Centre for Biodiversity
ADP	Agrodealer Development Programme
AfCFTA	African Continental Free Trade Area
AGRA	Alliance for Green Revolution in Africa
ASA	Agricultural Seed Agency
AU	African Union
CAADP	Comprehensive African Agricultural Development Programme
CCM	Chama Cha Mapinduzi
DUS	Distinct, Uniform and Stable
EAC	East African Community
FISP	Farm Input Subsidy Programme
FtF-MnM	Feed the Future–Mboga na Matunda – a USAID programme
GDP	Gross Domestic Product
PASS	Programme for Africa’s Seed Systems
PBR	Plant breeders’ rights
PVP	Plant variety protection
RGoZ	Revolutionary Government of Zanzibar
UWAMWIMA	Umoja wa Wakulima wa Matunda na Mboga Mboga
UPOV	International Union for the Protection of New Plant Varieties 1991
URT	United Republic of Tanzania
USAID	United States Agency for International Development
ZARI	Zanzibar Agricultural Research Institute
ZDV	Zanzibar’s Development Vision 2050



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ABOUT THIS PAPER

This paper highlights the role that seed laws play in facilitating the expansion of the Green Revolution project on the continent, by creating regulatory environments that enable corporate entry and control of seed and agriculture systems. In this regard, building on the ACB's formidable and consistent body of work on seed laws and policies in Africa, it provides a critique of Zanzibar's Seed Bill, as an example. It argues and demonstrates that such laws entrench the marginalisation of farmers' seed systems and undermine the realisation of farmers' rights. Consequently, such laws preclude the existence of alternative appropriate systems for farmer seeds, which are rooted in the realities of smallholder farmers, and which promote agricultural biodiversity through agroecological systems, while upholding farmers' and human rights.

INTRODUCTION AND KEY ISSUES

Zanzibar's draft Seed Bill of 2020, awaiting Cabinet approval, is a typical commercial seed law aimed at regulating the commercial seed sector. It restricts the sale of uncertified seed and imposes harsh penalties of fines and imprisonment for farmers who fail to comply with stringent provisions of the law. Consequently, in practice, this could criminalise the sale and even exchange of farmers' seed – the very foundations for farmer managed seed systems – and the exercise of farmers' rights. The Bill does not provide any safeguards for farmer seed systems, in the form of exceptions for smallholder farmers to freely exchange and sell their seed. This is at odds with small-scale farmers' long and established history of saving and exchanging most of their seed; between 85% and 100% of seed used by these farmers comes from their farmer managed seed systems. The Bill is also blind to creating any mechanisms to support the development of alternative farmer-led seed quality standards, an indispensable component of farmers' rights, as well as essential to enhancing agricultural biodiversity, soil fertility and ecological balance on the islands.

The linear model of development intrinsic to Zanzibar's Seed Bill, linked to industrialisation and modernising Africa, will undoubtedly lead to corporate capture, exploitation and agrarian extractivism, deepened inequalities, social exclusion, and violations of human rights. This model is being repeated in many countries across the continent, where seed laws are being changed to enhance private sector control of the seed sector: we have witnessed this to be the case in Kenya, Tanzania, and Malawi, for example. Tanzania's seed law restricts the sale and exchange of uncertified seed, while Kenya has gone so far as to criminalise the sale and sharing of all unindexed seed, including indigenous seed. Farmers who continue their age-old seed saving and exchange practices face a jail term of six months or a fine of 20 000 Kenya Shillings. This shift in Zanzibar is coinciding with the advance of the commercial horticulture sector on the islands, as part of a broader industrialisation and economic development strategy of the East African Community (EAC). Although the industrialisation of the agriculture sector is still nascent in Zanzibar, and its seed industry in its infancy stage, there are several commercial horticultural projects underway, funded by inter alia, the United States Agency for International Development (USAID). These serve as important entry points for the development of a commercial seed industry on the islands.

BROADER CONTEXT

Where previously the regional economic communities in Africa spearheaded the harmonisation of seed laws and intellectual property rights over new plant varieties (ACB, 2018a; 2018d; 2018e), to expedite the commercialisation of the seed sectors in regional economic communities, we see a shift towards a continental-wide push to harmonise. This is borne out by three guidelines by the African Union (AU), which deal with seed laws, intellectual property rights over seeds, and biotechnology. The guidelines were published to link up, inter alia, with the African Continental Free Trade Area (AfCFTA) (ACB, 2021c; 2021e) and the AU's Green Recovery Action Plan (ACB, 2021d).

The AfCFTA – aimed at building regional value chains linked to the rapid industrialising of agriculture and food systems in Africa – is part of a wider agenda to deepen extraction from the continent of labour, minerals, wood, water, food, fibre, genetic resources, and finance. This project depends on single-crop, productivity-raising technologies, such as genetic modification, value chain development, blue growth initiatives¹ and digitalisation, which are largely driven and controlled by the corporate sector. Structural issues such as state neglect, governance failures, corruption, public underinvestment, economic and political subordination, and corporate capture are pointedly ignored.

As part of the same agenda, the AU, whose Development Agency is funded by philanthrocapitalism – prominently, the Bill and Melinda Gates Foundation (Gates Foundation) – has crafted a blueprint for industrialising Africa's food systems. The blueprint, based on the hopelessly failed Green Revolution model, was presented to the corporate captured UN Food Systems Summit during 2021 (ACB, 2021b; 2021f).

Likewise, the Alliance for a Green Revolution in Africa (AGRA), launched in 2006 and brainchild of the Gates and Rockefeller Foundations, has been instrumental in

advocating for, developing and scaling up commercial seed systems through its Programme for Africa's Seed Systems (PASS). PASS, through its Agrodealer Development Programme (ADP), is the primary conduit for the provisioning of seed, chemical fertilisers, and pesticides to farmers. In mainland Tanzania, agrodealers in ADP have been accused, for example, for being responsible for the proliferation of what is termed as 'fake seed.' This is also the case in Zanzibar, where, according to farmers, agrodealers supplied 'fake seed,' which failed to germinate, causing crop and consequent socio-economic losses.

However, the ACB during its research, was unable to ascertain whether these agrodealers in Zanzibar are linked to AGRA's ADP, as is the case with mainland Tanzania. Ironically, these actions by seed and agrochemical entrepreneurs created by the Green Revolution machinery are being used as the rationale for the recrafting of seed laws and adoption of draconian seed legislation. We are witnessing the capture of decision-making spaces by the AGRA machinery across the continent, to create a highly protectionist market for corporate seed and thereby entrench the dominance of commercial seed trade. At the same time, all uncertified seed will be branded as 'fake seed', arguably and ominously including farmers' seed.

It is tragic that Zanzibar is missing a unique opportunity to shift completely to agroecological farming. Such a shift would respond to the needs and interests of smallholder farmers, and the Zanzibaris in general. Zanzibar's Seed Bill foregoes an opportunity to vest control of seeds, biodiversity, land and territories, water, knowledge, and culture in the hands of those responsible for producing and protecting these resources, and for feeding the peoples of the islands.

¹ Blue Growth Initiatives (BGI) is FAO's model for sustainably developing fisheries and aquaculture. BGI is similar in many respects to the blue economy concept, pioneered by the 2012 Rio+20 United Nations Conference on Sustainable Development, as an economic pathway for the development of coastal states. It encompasses a range of productive sectors, including fisheries, aquaculture, tourism, transport, shipbuilding, energy, bioprospecting, and underwater mining and related activities. Essentially this is a top-down project that, while claiming to enhance the living standards and livelihoods of people, promotes exploitative activities such as seabed extractives, marine biotechnology, and bioprospecting, as if aquatic resources are limitless (see HOMEf, 2020).



INDUSTRIALISATION AND CORPORATISATION OF FOOD AND SEED SYSTEMS IN AFRICA: SOME KEY PLAYERS AND DRIVERS

Over the last two decades, multiple strategies and actors have been at play to usher in the industrialisation of agriculture on the African continent, spearheaded by the ‘new’ Green Revolution.

This Green Revolution project is comprised of three key pillars:

- **Infrastructure development in key regional hubs** to transport commercial grain and oilseed crops in growth corridors² at historically important transport routes;
- **New regional and national seed and plant variety protection legislation** to enable private ownership of land, seed and other natural resources, with scant public participation and oversight (ACB, 2016b; 2022); and
- **Technical and practical support work with farmers** to facilitate: the dissemination of technological packages comprising of commercial/ corporate (mainly hybrid) seed, synthetic fertilisers and pesticides; irrigation and land consolidation; and access to interest-based credit and commercial markets. This is coupled with technical skills development supported by universities and agricultural research institutions (FOE & ACB, 2017).

The adoption by African governments of the Green Revolution agenda in regional and national agriculture policies has provided the impetus for the privatisation and corporatisation of African agriculture, driven by, inter alia, AGRA; the G8 New Alliance for Food Security and Nutrition (NAFSN), launched in 2012; Grow Africa, founded jointly by the AU, the New Partnership for Africa’s Development (NEPAD) and the World Economic Forum (WEF) in 2011; and many others of similar orientation (FOE & ACB, 2017).

The AU’s Comprehensive African Agricultural Development Programme (CAADP), which largely defines Africa’s agricultural agenda at the continental level, has provided the enabling framework for the Green Revolution project. AGRA and the G8 NAFSN, among others, have aimed specifically at linking agriculture in Africa with global circuits of capital and consolidating the global food regime, which is monopolised by multinational behemoths – especially input supply (seed and agrochemicals) – thus opening markets for these corporations on the continent (FOE & ACB, 2017).

² Such as the Beira agricultural growth corridor and Southern African Growth Corridor for Tanzania (SAGCOT) (see ACB, 2015a; 2015b)

While these Green Revolution interventions initially focused on a handful of commercial crops (such as maize, rice and oil-producing crops), it now also includes commercial horticulture production for export, particularly to Europe, where a formidable market exists for fresh fruit, vegetables, and flowers (The EastAfrican, 2022; World Bank, 2005).



Europe accounts for the largest share of imports of fruits and vegetables from the EAC (The EastAfrican, 2022). In 2022, the EAC unveiled plans to increase fruit and vegetable exports, especially to Europe, and to increase the area under fruit cultivation by 10 million ha and vegetable cultivation by 12.2 million ha (The EastAfrican, 2022).

This is in keeping with the horticulture sector constituting a significant component of the EAC's industrialisation agenda (The EastAfrican, 2022) and generating foreign export earnings (World Bank, 2005).

Kenya is the continent's largest exporter of cut flowers to Europe and the United Kingdom and the fourth largest exporter of cut flowers in the world (OEC, n.d.), followed by Ethiopia (Fanabc, 2020), pursuant to free trade agreements.

Consequently, countries such as Kenya have embraced intellectual property rights laws based on the Eurocentric International Union for the Protection of New Varieties of Plants (UPOV 1991), to protect breeders' rights in the cut-flower industry, especially. For example, in 2008, the horticulture sector³ formed the bulk of plant breeders' rights (PBR) applications for flowers and ornamentals (Sikinyi, 2009). Similarly, countries such as Ethiopia, and more recently Zimbabwe, have adopted for, or are crafting intellectual property (IP) laws based on UPOV 1991, in response to the demands from the horticulture sector.

However, these laws also apply beyond the commercial horticulture sector, dispossessing farmers of the right to their seed and criminalising their age-old seed and farming practices. Africa's overdependence on global trade has thus given multinational seed companies impetus to claim ownership over seed cultivated and sustained over millennia by smallholder and peasant farmers.

³ This information is not in the public domain and is based on discussions with officials in both Ethiopia and Zimbabwe with regards to the draft PBR laws and rationale for the developing of these.

REGIONAL HARMONISATION OF SEED LEGISLATIVE FRAMEWORKS IN AFRICA

Regional harmonisation of seed law frameworks has been crafted under the aegis of regional blocs and communities such as the Southern African Development Community (SADC), the Common Market for East and Southern Africa (COMESA) and the Economic Community of West African States (ECOWAS) (ACB, 2018a). Regarding regional plant variety protection (PVP) frameworks, these have taken place under SADC (ACB, 2018e) as well as institutions such as the African Regional Intellectual Property Organisation (ARIPO) (ACB, 2018d) and its French counterpart Organisation Africaine de la Propriété Intellectuelle (OAPI) and are based on the highly restrictive and inflexible, one-size-fits-all UPOV 1991. As has already been documented by the ACB, regional harmonisation aims to expedite trade in seed across national borders and expand corporate seed markets in the region (ACB, 2018a). These laws not only serve the interests of corporations, but also criminalise the foundation of Africa's agriculture – the free saving, exchanging, selling, and breeding of farmer seed by smallholder farmers (Mahapatra & Pandey, 2022). With the processes and impetus now moving to the continental level by way of the AU's continental guidelines for the harmonisation of seed frameworks, we will witness more expeditious corporate takeover of seed, food, and agricultural systems on the continent (ACB, 2022).

AGRA'S FAILED AGRODEALERS PROJECT AND THE FAKE SEED DEBACLE

AGRA has played and continues to play a key role in the development and scaling up of commercial seed systems on the continent, especially through its Programme for Africa's Seed Systems (PASS). PASS's Agrodealer Development Programme (ADP) is a vital component of the Green Revolution project and provides training, capital, and credit to establish small agrodealers across the continent (ACB, 2015).

The establishment of agrodealer networks has come at a painful cost to smallholder farmers, who are accusing them of selling seed that has failed to germinate, causing huge financial losses to the farmers.⁵ Tragically, these smallholder farmers, already heavily dependent on corporate seed and having lost their autonomy, have no recourse to claim and receive compensation for crop losses due to poor germination rates.

The main objective of the ADP was to establish agrodealers as primary conduit of seeds, fertilisers, chemicals, and training to smallholder farmers (ACB, 2009). Between 2007 and early 2017, PASS invested over USD 38 million to develop agrodealers in 15 African countries⁴ (AGRA, 2018); training 20 038 agrodealers in technical knowledge and 20 017 in business management, with a total of 19 174 agrodealers being certified by early 2017 in 14 African countries (AGRA, 2018).

The establishment of agrodealers in the United Republic of Tanzania (UR) can be traced to AGRA's ADP project, where more than USD 15 million was awarded to a United States non-governmental organisation, CNFA, to develop an input distribution system. More than 1 000 agrodealers were trained and 2 000 certified (ACB, 2015).

⁴ Burkina Faso, DR Congo, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Sierra Leone, Tanzania, Uganda and Zambia
⁵ Focus group discussion with UWAMWIMA farmers, 25 April 2022

It is worthwhile noting that this heavy reliance on corporate seed has also resulted from farm input subsidy programmes (FISPs) – again, enabled by AGRA’s trained agrodealers, who are key in the distribution of inputs to farmers (AGRA, 2018). Subsidies are provided for a few commercial seed and crop varieties and eligibility is dependent on the use of inter alia, certified seed. However, FISPs have no real impact on the quality of life or incomes of farming households, and the main beneficiaries are the multinational corporations who amass profit from a guaranteed market for seed and fertilisers (ACB, 2018c; 2018f).

The seed industry has attributed incidences of fake seed to many factors, including lack of proper training for agrodealers, who fail to note the expiry dates of seed, and unscrupulous agrodealers bent on making profits by re-packaging seed that has already expired (ACB, 2015a). Agrodealers, however, argue that they have been supplied with fake inputs (USAID, 2020b). This debacle raises serious questions about how well the Green Revolution’s seed value chain is working, as it appears to have broken down. AGRA, through its agrodealer programme, appears to have created a monster in the form of a value chain that is able to circumvent the highly regulated seed systems put in place. However, African governments, rather than abandoning this failed project, which is greatly imperilling farmers, are instead using ‘fake seed’ as a reason for crafting draconian seed laws.

In this regard, on the pretext of curbing the proliferation of ‘fake seed’, several seed laws have come under revision on the continent, imposing extremely stringent seed certification standards, while restricting and criminalising seed that is not certified (Mahapatra & Pandey, 2022). For instance, the revised Kenyan Seed and Plant Varieties Act of 2012, which was enacted towards the end of 2021, criminalises sharing and selling of seeds of unindexed plant varieties. Farmers who sell or share indigenous seed can face a jail term of six months or a fine of 20 000 Kenyan shillings (USD 180) (Ngotho, 2021; Zowan254, 2022). Kenya’s seed industry is already largely dominated by the corporate sector, and the country is an important hub for the multiplication of corporate seed. It has, as already mentioned, a large horticulture and cut flower industry. Similar provisions contained in the Kenyan Seed and Plant Varieties Act can also be found in the Tanzanian Miscellaneous Amendments of 2014 of the 2003 Act, which also restricts the sale of any seed⁶ that is uncertified (ACB, 2016a). Most recently, AGRA also facilitated (with indecent haste) an untransparent and flawed process, culminating in the adoption of the Malawi Seed Act of 2022 (Mlanjira, 2022). While the seed law in Malawi has confined itself to only restricting the sale of seed under the pretext that it is certified seed when it is not, the law is largely silent regarding the recognition of farmer managed seed systems. Ambiguity has thus been created regarding whether the rights of farmers to sell and exchange farm saved seed are exempted from the certification requirements of the Act.

The adoption of a linear model of development, linked to industrialisation and modernising Africa and in particular African agriculture led by inter alia, AGRA is deeply concerning. It is worth noting that a research report released in 2021 (AFSA et al., 2021) confirmed the ACB’s forewarnings (ACB, n.d.) that in several countries, including Kenya, Mali, Zambia and Tanzania, it has not only failed to deliver on its promises, but has hugely exacerbated hunger by 30% (AFSA et al., 2021). The ACB’s research report concerning the aggressive agrarian extractivism taking place in Ethiopia, concluded that the market and techno-centred development consensus does not offer easy answers for African economies and instead, is driven by the particularities of insertion of southern economies into neoliberal globalisation, in a context of global hierarchies, domestic inequalities and politics, and regional geopolitics (ACB, 2021a). These tend to displace local communities and smallholder producers, who are the poorest and most vulnerable, raising alarm bells as to what the future holds for Zanzibar and its smallholder farmers, agricultural biodiversity, culture, traditions and way of life and autonomy in the coming years.



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⁶ The Tanzanian 2003 Seed Act defines ‘sell’ as that which includes ‘sale, offer for sale, expose for sale, have in possession for sale, and distribution or give away’ (URT, 2003). By expanding the scope within which ‘sale’ is defined, this definition thus also includes ‘exchange’.

ZANZIBAR: CASE STUDY

LAYING THE GROUND FOR GREEN REVOLUTION SEED INITIATIVES IN ZANZIBAR

The Revolutionary Government of Zanzibar is a semi-autonomous government within Tanzania, which consists of the northern part of the Zanzibar archipelago, mainly the islands of Unguja and Pemba. According to the National Bureau of Statistics, by 2012 the population of the archipelago was 1.3 million (URT, 2013) and was projected to reach 1.7 million by 2021 (Faria, 2021). Despite it being an integral part of the United Republic of Tanzania, it still has its own Executive, Legislature and Judiciary and exercises its sovereignty over domestic matters and all non-union matters,⁷ while authority of all union matters⁸ is vested in the President of the URT.

Since agriculture is a non-union matter between Zanzibar and mainland Tanzania, this means that while laws are passed separately, these must be in harmony with each other. However, this still doesn't signify complete autonomy. Owing to political pressure to enable Tanzania as a whole, to join the UPOV 1991 Convention, Zanzibar's Plant Breeders Rights Act, adopted in 2014, is based on UPOV 1991 and is in line with mainland Tanzania's PBR law (ACB, 2016), which ensures PVP protection over breeders' seed across the entire territory.

For years, Zanzibar has been heavily dependent on imports of fresh food from mainland Tanzania, particularly rice, maize and beans and vegetables. This was a consequence of trade liberalisation measures imposed by Ali Hassan Mwinyi's regime as president of the United Republic of Tanzania during the 1980s. At the time, the importation of consumer and other goods was still rigidly controlled by mainland Tanzania.



Agriculture contributes significantly to Zanzibar's Gross Domestic Product (GDP) and employment, as is the case with other sub-Saharan African countries. In 2017, the sector employed 40% of the population with 70% depending directly or indirectly on agriculture for their livelihoods (RGoZ, 2018). In 2020, the agriculture sector contributed 22.8% of Zanzibar's GDP compared to 21.2% in 2019 (OGSZ, 2020).

The islands depend on limited agricultural commodities as key primary exports including cloves and seaweed. Agriculture is predominantly subsistence based and the main food crops include rice, cassava, bananas, sweet potatoes, yams, legumes (cowpea, green gram, and pigeon peas), and a range of fruits, vegetables, and spices (ASARECA/KIT, 2014).

⁷ These include: Local Government; Road Maintenance and Travel; Agriculture, Livestock, Fisheries and other means of livelihood; Trade and Small-Scale Industries and Prison. See <https://johnchalla.wordpress.com/2017/08/09/union-vs-non-union-matters/>

⁸ The list of twenty two union matters between Zanzibar and mainland Tanzania is listed here <https://www.vpo.go.tz/uploads/publications/en-1593598783-ARTICLES%20OF%20UNION%20final.pdf>

Only recently, from 2018, have imports, particularly of fruits and vegetables, reduced due to several interventions made in the horticulture sector (ACT, 2018). Common vegetables grown in Zanzibar include tomatoes, eggplants, green peppers, okra, chillies, cabbages, cucumbers, spinach, amaranth, Chinese cabbage, cassava leaves, cowpea leaves and onions. The spill-over of AGRA's activities on mainland Tanzania has taken the form of grants to the Zanzibar's Ministry of Agriculture, Natural Resources, Livestock and Fisheries provided by PASS for the multiplication and dissemination of cassava virus tolerant planting materials in the Kizimbani (Unguja) and Matangatuani (Pemba) research stations (AGRA, 2018).

Further to this, USAID's horticulture projects, Mboga na Matunda (MnM) (translated as 'vegetables and fruits') and Nafaka (translated as 'grains') among others, have also featured strongly under its Feed the Future programme for the period 2017–2022. Already, under USAID's Feed the Future–Mboga na Matunda (FtF-MnM) project on the island, agrodealers have been trained and skills and knowledge imparted about hybrid seed cultivation and the use of agro-chemicals, to encourage uptake. Currently, horticulture is perceived as Zanzibar's fastest growing sub-sector and involves many smallholder farmers. In 2016, horticulture earned Zanzibar USD 39 million and it is hoped it will diversify Zanzibar's clove-dependent economy (The EastAfrican, 2016).



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OVERVIEW OF ZANZIBAR'S SEED AND AGRICULTURAL LANDSCAPE

The commercial seed sector in Zanzibar is still in its infancy, with no registered seed companies or presence of agrodealers, and is largely public sector driven compared to mainland Tanzania. Zanzibar's seed systems have been categorised as: farmer saved, farmer-to-farmer and community-based systems; public and contract systems; and the commercial/formal seed system. Between 85% and 100% seed used in Zanzibar comes from farmer managed seed systems. This seed is developed and produced by community-based interventions and from local 'informal' multipliers (ASARECA/KIT, 2014).

Other sources of seed, especially from the formal seed sector, comes from government programmes and agrodealers, who source these from the mainland and sometimes from local seed multipliers (who are periodically inspected by agricultural extension officers) (ASARECA/KIT, 2014). Local seed multipliers are mostly involved in cassava, sweet potato, and cowpea production, and generally produce seed for own use (saved) and to sell to neighbours (farmer-to-farmer). Unfortunately, these practices face a few challenges due to the lack of adequate skills in dealing with pests and diseases, especially in the changing climate.

In a government seed programme, the Ministry of Agriculture's seed division purchases seed from mainland Tanzania's Agriculture Seed Agency (ASA) for multiplication by contract growers and the seed division itself, on its own farms (ASARECA/KIT, 2014). An example is the cultivation of common rice varieties such as SARO and TXD 88. The seed is then distributed to rice farmers at district, and sometimes village, level by the public seed unit and/or marketed through agrodealers at a highly subsidised price – far below the market price (ASARECA/KIT, 2014). The seed multiplied from ASA is neither quality declared seed⁹ nor certified seed. It is not clear whether there are alternative certification standards that are currently in use and recognised on the island, and this requires further investigation. The Zanzibar Research Institute (ZARI) conducts research on paddy rice, leafy vegetables, cassava, sweet potatoes, and banana,¹⁰ and has been instrumental in also providing planting materials in the form of fresh cuttings to farmers for root and stem crops, every three years.

Regarding the fast-growing horticulture sub-sector, largely dominated by smallholder farmers, agrodealers also play a crucial role in the sale of hybrid corporate vegetable seed. Different to the intervention mentioned above regarding rice varieties, where agrodealers are involved in the distribution of public seed, the vegetable seed is imported from private seed companies registered in mainland Tanzania, such as Balton, Syngenta, Regina Seeds, Rijk Zwaan and East African Seeds – all key project partners (USAID, 2020a). Currently, these companies dominate mainland Tanzania's national variety list regarding vegetable seed,¹¹ signifying an already corporate controlled horticulture seed sector in Tanzania. The seeds of only a few horticultural crops such as passion fruit, papaya and pumpkin are saved for re-use by farmers, while the rest is bought from agrodealer outlets.¹² Such a system, which creates a high level of dependency on hybrid seed from private companies, is deeply worrisome. It is important to note that there is an absence of small local seed companies who can undertake multiplication of seed on the islands. In collaboration with small-scale farmers, small local seed companies/enterprises at the country level could play a role in producing farmers' seed that addresses the needs of such farmers, while developing the local economy.



However, the opportunity for the development of such partnerships is being foreclosed by the Green Revolution project underway on the island.

9 Quality declared seed is a seed production system that emanates from the Food and Agriculture Organisation (FAO). It provides a semi-formal type of seed system for the participation of smallholder farmers in the multiplication of improved open pollinated seed varieties (see ACB, 2016a: 10).

10 <http://www.zanzibarassembly.go.tz/files/budgets/ministerial-budget/1621951687.pdf>

11 See <https://www.tosci.go.tz/uploads/publications/sw1650889935-Variety%20List-25-April-2022.pdf> pg 140

12 Focus group discussion with UWAMWIMA farmers, Zanzibar, 25 April 2022

POVERTY REDUCTION STRATEGIES IN ZANZIBAR LINKED TO AGRICULTURE

More than a third of Zanzibaris live below the basic poverty line (RGoZ, 2017), with poverty levels being higher in the rural areas, where the majority of the population reside (World Bank, 2017). Most of the poor are also food insecure, with a prevalence of malnutrition within households (RGoZ, 2017). This is attributed to systemic lack of adequate state support for the population to access resources, heavy reliance on food imports, the impacts of climate change, environmental degradation, deforestation, and reduced biodiversity (RGoZ, 2008).

The government has adopted the Zanzibar Strategy for Growth and Poverty Reduction (ZSGRP), which informs and guides its poverty reduction strategies, targeting agriculture, tourism, industrialisation and trade, blue economy, oil and gas, and creative and digital economies. Zanzibar's president Hussein Mwinyi established Zanzibar's first Ministry of Blue Economy and Fisheries in 2020 and a total of 149 billion shillings has been allocated to blue economy initiatives (Christopher, 2022).

The overall aim is to transform Zanzibar from lower-middle income to upper middle-income status, as aspired to in the Zanzibar Development Vision 2050 (ZDV 2050) – a successor to the previous Vision 2020. Regarding agriculture, the ZDV 2050 insists on 'a reorientation of the economy away from subsistence-based agriculture to higher value-added activities' (RGoZ, 2020). Policies and initiatives such as the Zanzibar Agricultural Transformation Initiative (ZATI) 2010–2020, the Chama Cha Mapinduzi (CCM) Ruling Party's Manifesto 2020–2025, Sustainable Development Goals (SDGs) and Zanzibar's Agricultural Sectoral Development Programme (Z-ASDP),¹³ emphasise the commercialisation and industrialisation of agriculture on the islands.

Furthermore, with Zanzibar being a top global tourist destination, ZDV 2050 envisages a strong link between the agriculture and tourism industries, with organised tours of farms and plantations that produce a range of spices and fruits. The role and involvement of the private sector is emphasised, particularly regarding expanding agricultural production for export – targeting mainland Tanzania, the East African region, and international markets (RGoZ, 2020).

This industrialisation agenda, which forms the basis for economic development, creates a conducive environment for other Green Revolution initiatives to find a foothold in Zanzibar. Already, plans for mechanisation and infrastructure development, including irrigation for rice, are on the cards. Further, with the increasing demand for horticultural crops, both for domestic consumption and export, the USAID's FtF-MnM supply of hybrid seed and agro-chemicals sold by agrodealers are shaping the changes to farming systems on the islands, and this is bound to spill over to other food crops. Sadly, state support has not been forthcoming for a farming system commonly described as 'organic by default', in which the majority of smallholder farmers practise low input agriculture using many organic principles, involving a range of food crops.

¹³ <http://www.zanzibarassembly.go.tz/files/budgets/ministerial-budget/1621951687.pdf>

ZANZIBAR'S DRAFT SEED BILL: DRACONIAN PROVISIONS FOR SALE AND EXCHANGE OF SEED

Zanzibar's draft Seed Bill has not yet been assented to by the government but has passed through stakeholder consultations, including some smallholder farmers from the farmers' association, Umoja wa Wakulima wa Matunda na Mboga Mboga (UWAMWIMA). The next steps involve the incorporation and consolidation of feedback received from the Zanzibar Law Review Commission, whereafter, it will be taken to Cabinet for approval.

The draft Seed Bill is a typical commercial seed law aimed at regulating the commercial seed sector. The Bill contains similar provisions as those of mainland Tanzania's Seed Act of 2003 and similarly fails to provide any safeguards for smallholder farmers to freely exchange and sell their seed, in keeping with the current trend in many African countries. It can thus be interpreted that Zanzibar's draft Seed Bill applies to all seed, regardless of whether these emanate from multinational companies or individual farmers reproducing seed on their own land and selling and exchanging seed with neighbours and/or in local markets. This is detrimental for a country where there is a clear history of farmers saving and exchanging most of their seed. It does not acknowledge the need for an alternative seed regulatory system to exist – one that will protect and implement farmers' rights, recognise farmer managed seed systems, and protect the vital role that agricultural biodiversity plays towards ensuring food sovereignty and ecological balance and stability. This omission is bound to further marginalise and could even criminalise farmers' seed, since the Bill intends to put in place stringent requirements for variety registration, certification, processing, and distribution. The rationale given for the passage of the Bill by Zanzibar's government officials is that it intends to curb the dissemination of fake seed, yet we remain concerned that this is the beginning of the end of farmers seed systems on the islands.

The current government structure in Zanzibar has few mechanisms to ensure oversight of seed entering the islands, with no procedures or mechanisms for dealing with complaints from farmers, or any recourse for them to receive compensation if anything goes wrong. The Bill

is heavily focused on providing a legislative environment for the commercial sale and marketing of certified seed. It provides for extensive institutional arrangements and decision-making bodies, such as a seed advisory committee, and technical officials such as seed inspectors and samplers.¹⁴ Unfortunately, smallholder farmers are not represented in the decision-making bodies, particularly the seed advisory committee, making it impossible for them to directly influence seed-related policy processes.

The Bill makes provision for the establishment of a seed certification system or quality control agency to mimic the Tanzania Official Seed Certification Institute (TOSCI) and recognises the Zanzibar Agricultural Research Institute (ZARI) laboratory to test and sample seed to ensure seed quality.¹⁵ It is questionable, though, how these institutions will operate in terms of capacity and financial resources, given the already strained government budget. Will the funding for the running of these institutions come from external sources, including from the private sector? Will this result in the eventual corporate capture of public institutions? Or even self-regulation?



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¹⁴ Sections 3, 4, 5, 22, 25 and 26 of the draft Seed Bill

¹⁵ Section 49 of the draft Seed Bill

KEY SPECIFIC CONCERNS WITH THE DRAFT SEED BILL

Zanzibar's draft Seed Bill restricts the sale of seed that is not certified and that does not conform to the prescribed conditions and standards.¹⁶ Failure to adhere to these provisions will result in stringent penalties of fines and imprisonment. According to the definition, 'sell' means sell, offer for sale, expose for sale, have in possession for sale and distribution or give away. It thus adopts the characteristics typical of a commercial seed law, which conforms to international standards as set by the International Seed Testing Association (ISTA) and Organisation for Economic Co-operation and Development (OECD) schemes, rules, regulations and guidelines for variety release and seed certification. Taken together, they require that only seed that has been certified as conforming with the 'distinct, uniform and stability' (DUS) UPOV standards for germination and purity, may be marketed. Consequently, in practice, this could criminalise the sale and even exchange of farmers' seed – the very foundations for farmer managed seed systems (ACB, 2018b).

DUS is not appropriate for farmer needs, especially considering diversity and dynamic evolution (ACB, 2018b). It is too rigid to accommodate the constant adaptation of genetic materials that takes place in farmer fields, through natural, including human, selection processes, resulting in genetic variability that helps farmers avoid the risk of total crop failure and promotes agricultural biodiversity. Furthermore, access to diverse, locally adapted seed is crucial to responding to the multiple challenges facing sustainable food production in Africa today, especially climate change (ACB, 2019b). For seed to be sold, and multiplied, the person undertaking such activities must be registered.¹⁷ These provisions are not targeted at smallholder farming but at seed multiplication and production of corporate or 'improved' seed. However, the new system will dislocate current seed systems, as already discussed above, and side-line individual farmers who produce seed suited for agroecological farming practices, without having registered or obtained certificates.

As there are no provisions for alternative, farmer-led quality assurance systems or standards, it will be almost impossible to produce, multiply and distribute seed and have it legally recognised, without first complying with the provisions of the seed law. The systematic erosion of customary farmer seed practices of freely saving, using, exchanging, and selling farm-saved seeds and other propagating material, appears to be inevitable.



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IMPLICATIONS FOR SMALLHOLDER FARMERS AND FARMER SEED AND AGRICULTURAL SYSTEMS

Criminalisation of farmer managed seed systems infringes on farmers rights and other human rights, such as to life and food. These rights are enshrined in the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), to which Tanzania is a Party¹⁸ and the United Nations Declaration on Rights of Peasants and Other People Working in Rural Areas (UNDROP).¹⁹ Recently in his report, the UN Special Rapporteur on the Right to Food emphasised the links between farmers' seed systems and the full realisation of right to life and food.²⁰ In particular, he pointed to the threats posed by commercial seed systems and intellectual property on seed – destabilising ecosystems and violating people's human rights, through controlling and restricting access to seed.

African countries have failed to provide for these rights in their recently adopted seed legislation. There are a few instances where safeguards exist, for example, the Ethiopian Seed Proclamation 782/2013²¹ allows smallholder farmers (over 96% of all farmers in Ethiopia) to use, exchange and sell any farm-saved seed among themselves without having to comply with any of the provisions of the seed law. However, it does not go so far as to put in place a discrete regime for the full realisation of farmers' rights and protection and support to farmer seed systems.

16 Section 29 (5) of the draft Seed Bill

17 Sections 31, 36 and 37 of the draft Seed Bill

18 See Article 9 of the ITPGRFA

19 See Article 19 of UN Declaration on the Right of Peasants and Other People Working in Rural Areas.

20 Accessed at <https://digitallibrary.un.org/record/3956872?ln=en>

21 See Article 3 of the Ethiopian Seed Proclamation of 2013.



OPPORTUNITIES FOR FARMER AUTONOMY AND AGRICULTURAL BIODIVERSITY IN ZANZIBAR

Zanzibar is in a unique position in that the lack of private seed companies on the islands and the still nascent Green Revolution initiatives present an opportunity for the government to adopt a just transitions framework for its food and agriculture sector; one that will promote the use and development of agricultural biodiversity and ensure the autonomy of smallholder farmers vis-à-vis their seed systems. The existing ‘organic by default’ farming that smallholder farmers practise presents a good starting point. However, the development pathway based on industrialisation, that Zanzibar is embarking upon, is deleterious and conducive to corporate capture and expansion, threatening existing livelihoods and rights of smallholder farmers.

As discussed in the paper, there are seed initiatives and processes on the islands that could be supported and upscaled, for example, the capacity of local seed multipliers. The government has an opportunity to support and recognise such systems legally – that are based on farmer-led alternative quality assurance criteria. Placing smallholder farmers at the core of maintaining, enhancing,

using, and sharing seed will ensure seed diversity and further provide an alternative to the formal seed system, while preventing the dissemination of ‘fake seed’. This should be accompanied by exemptions for the use, exchange, and sale of farmer seed in the draft Seed Bill. Such exemptions should allow farmers to exchange and sell seed between themselves or in their localities without constraint and should be linked with publicly funded programmes, such as public procurement and school and hospital feeding schemes, as was the case in Brazil (ACB, 2019a).

Zanzibar should embrace family and community farming and agroecology, and put control of seeds, biodiversity, land and territories, waters, knowledge, culture, and the commons in the hands of the people who feed the islands. It should embrace the knowledge systems, cultures, and traditions that exist, and weave together those who have been split apart by the extractive ‘development’ of our territories, first under colonialism and now under inadequately democratic and forceful independence.

REFERENCES

- ACB, n.d. Alliance for a Green Revolution in Africa: Turning Africa into a repository for failed agricultural technologies. <https://www.acbio.org.za/sites/default/files/documents/202110/acbagrturningafriacaontoarepositoryforfailedagriculturaltechnologies0.pdf>
- ACB, 2009. Africa's Green Revolution rolls out the gene revolution. https://www.acbio.org.za/sites/default/files/2015/02/gene_revolution_brief.pdf
- ACB, 2015a. Nuanced rhetoric and the path to poverty: AGRA, small-scale farmers, and seed and soil fertility in Tanzania. <https://www.acbio.org.za/sites/default/files/documents/Tanzania-report.pdf>
- ACB, 2015b. Agricultural investment activities in the Beira Corridor, Mozambique: Threats and opportunities for small-scale farmers. <https://www.acbio.org.za/sites/default/files/2015/10/Mozambique-2015-report-full.pdf>
- ACB, 2016a. Changing seed and plant variety protection laws in Tanzania: Implications for farmer managed seed systems and smallholder farmers. <https://www.acbio.org.za/sites/default/files/2016/05/Tanzania-Seed-Law-2016.pdf>
- ACB, 2016b. African civil society and farmer representatives blocked from ARIPO deliberations on regional seed (PVP) law. <https://www.acbio.org.za/african-civil-society-and-farmer-representatives-blocked-aripo-deliberations-regional-seed-pvp-law>
- ACB, 2018a. Status report on the SADC, COMESA and EAC harmonised seed trade regulations: Where does this leave the regions' smallholder farmers? <https://www.acbio.org.za/status-report-sadc-comesa-and-eac-harmonised-seed-trade-regulations>
- ACB, 2018b. Towards national and regional seed policies in Africa that recognise and support farmer seed systems. <https://www.acbio.org.za/sites/default/files/documents/Seed%20Policies%20in%20Africa%20report%20WEB.pdf>
- ACB, 2018c. Report from SADC regional farmer speak out on farm input subsidy programmes. <https://www.acbio.org.za/sites/default/files/documents/Report%20from%20SADC%20regional%20farmer%20speak%20out%20on%20FISPs.pdf>
- ACB, 2018d. The Arusha Protocol and Regulations: Institutionalising UPOV 1991 in African Seed Systems and Laws. <https://www.acbio.org.za/sites/default/files/documents/The%20Arusha%20Protocol%20and%20Regulations%20Institutionalising%20UPOV%201991%20in%20African%20seed%20systems%20and%20laws%20REPORT.pdf>
- ACB, 2018e. The SADC PVP Protocol. Blueprint for uptake of UPOV 1991 in Africa. <https://www.acbio.org.za/sites/default/files/documents/The%20SADC%20PVP%20Protocol-Blueprint%20for%20uptake%20of%20UPOV%201991%20in%20Africa%20REPORT.pdf>
- ACB, 2018f. The Future of Smallholder Farmer Support in Tanzania: Where to after the National Agricultural Input Voucher System (NAIVS) <https://www.acbio.org.za/sites/default/files/documents/The%20Future%20of%20smallholder%20farmer%20support%20in%20Tanzania%20Where%20to%20after%20the%20NAIVS%20system.pdf>
- ACB, 2019a. Production quality controls in farmer seed systems in Africa. https://www.acbio.org.za/sites/default/files/documents/Production%20quality%20controls%20in%20farmer%20seed%20systems%20in%20Africa%20FULL%20REPORT_2.pdf
- ACB, 2019b. Changing the discourse, policy and practice on farmer seed systems in Africa. <https://www.acbio.org.za/sites/default/files/documents/201911/changingthediscoursepolicyandpracticeinfarmermanagedafricafinal.pdf>
- ACB, 2021a. The violence of agrarian extractivism in Ethiopia: Locusts, state authoritarianism and webs of US imperialism. <https://www.acbio.org.za/sites/default/files/documents/202108/violence-agrarian-extractivism-ethiopia-locusts-state-authoritarianism-and-webs-us-imperialism.pdf>
- ACB, 2021b. Africa responds to the UNFSS. <https://www.acbio.org.za/africa-responds-unfss>
- ACB, 2021c. African social movements demand that AU suspends undemocratic and pro-industry seed and GMO guidelines and processes. <https://www.acbio.org.za/african-social-movements-demand-au-suspends-undemocratic-and-pro-industry-seed-and-gmo-guidelines>

ACB, 2021d. The AU's green recovery plan: Securing Africa's ecological future or deepening imperialist extraction and inequalities? https://www.acbio.org.za/sites/default/files/documents/202109/african-union-green-recovery-action-plansecuring-africas-ecological-future-or-deepening-imperialist_3.pdf

ACB, 2021e. Guidelines for the harmonisation of seed regulatory frameworks in Africa: Call for African social movements to block the validation meeting. <https://www.acbio.org.za/guidelines-harmonisation-seed-regulatory-frameworks-africa-call-african-social-movements-block>

ACB, 2021f. African social movements rise up against the UNFSS and the African Union's blueprint for corporate capture of our food systems. <https://www.acbio.org.za/african-social-movements-rise-against-unfss-and-african-unions-blueprint-corporate-capture-our-food>

ACB, 2022. African Union endorses draconian, undemocratic and corporate captured policy guidelines for seed and biotechnology for the continent. <https://www.acbio.org.za/african-union-endorses-draconian-undemocratic-and-corporate-captured-policy-guidelines-seed-and>

ACT, 2018. Agritourism regions for enhancing linkages between tourism and sustainable agriculture in the United Republic of Tanzania. <https://unctad.org/system/files/official-document/ditc-ted-22112018-tnz-organics-PPT-TanzaniaReport.pdf>

AfSA et al., 2021. A sting in the AGRA Tale: Independent expert evaluations confirm that the Alliance for a Green Revolution has failed. Background paper on AGRA's commissioned internal evaluations from 2019/2020 published at the beginning of 2021. https://afsafrica.org/wp-content/uploads/2021/07/agra_sting-in-the-agra-tale_eng_20210721.pdf

AGRA, 2018. Seeding an African Green Revolution: The PASS journey. <https://agra.org/wp-content/uploads/2018/02/PASS-Book-web.pdf>

ASARECA/KIT, 2014. Tanzania seed sector assessment: Participatory national seed sector assessment for the development of an integrated seed sector development (ISSD) programme in Tanzania. Synthesis Report <http://africasoilhealth.cabi.org/wpcms/wp-content/uploads/2016/10/Synthesis-Report-Landscaping-for-ISSD-Tanzania.pdf>

Christopher, J., 2022. Mwinyi: Zanzibar's blue economy on right track. The Citizen; Dar es Salaam [Dar es Salaam]. 13 Jan 2022. <https://www.proquest.com/docview/2619152247>

Faria, J., 2021. Projected population of Zanzibar from 2021 to 2025 (in 1,000 inhabitants) <https://www.statista.com/statistics/1219087/projected-population-of-zanzibar/#:~:text=The%20population%20of%20Zanzibar%2C%20a,nearly%201.9%20million%20in%202025>

FOE & ACB, 2017. Who will feed Africans? <https://www.acbio.org.za/sites/default/files/2017/01/FoE-Africa-report.pdf>

HOMEF, 2020. Blue economy blues: HOMEF introduction to blue economy. <https://homef.org/wp-content/uploads/2020/06/Blue-Economy-Blue-single-pages-1.pdf>

Mlanjira, D., 2022. Malawi agrobiodiversity network pleads with President Chakwera not to assent the Seed Bill into Act. marviExpress, 26 April 2022. <https://www.maraviexpress.com/malawi-agrobiodiversity-network-pleads-with-president-chakwera-not-to-assent-the-seed-bill-into-act/>

OECD, n.d. Cut flowers in Kenya. <https://oec.world/en/profile/bilateral-product/cut-flowers/reporter/ken>

OGSZ, 2020. Report from the Office of the Government Statistician Zanzibar 2020. <http://www.ocgs.go.tz/php/ReportOCGS/Zanzibar%20In%20Figures%202020.pdf>

Fanabc, 2020. Ethiopia Becomes Africa's Second Largest Flower Exporter. <https://www.fanabc.com/english/ethiopia-becomes-africas-second-largest-flower-exporter/>

Ngotho, A., 2021. Farmers shock as sharing seeds could land them six months in jail. Star, 28 December 2021. <https://www.the-star.co.ke/news/2021-12-28-farmers-shock-as-sharing-seeds-could-land-them-six-months-in-jail/>

Mahapatra R. & Pandey K., 2022. How governments across Africa defend troubling seeds regulations. DownToEarth 23 May 2022. <https://www.downtoearth.org.in/news/africa/how-governments-acrossn-africa-defend-troubling-seeds-regulations-82964>

RGoZ, 2008. Zanzibar Food Security and Nutrition Policy. April 2008. <https://extranet.who.int/nutrition/gina/sites/default/filesstore/TZA%202008%20Zanzibar%20Food%20security%20and%20nutrition%20policy.pdf>

RGoZ, 2017. Zanzibar strategy for growth and reduction of poverty ZSGRP III (MKUZA III), 2016–2020. [https://www.sheriasmz.go.tz/docs/En8hjdHkvg_MKUZA_III_NEW_\[1\].pdf](https://www.sheriasmz.go.tz/docs/En8hjdHkvg_MKUZA_III_NEW_[1].pdf)

RGoZ, 2018. Speech on Revenue and Expenditure estimates of the Ministry of Agriculture, Natural Resources, Livestock and Fisheries for the Financial Year 2018/2019. Submitted by the Minister of Agriculture, Natural Resources, Livestock and Fisheries. <https://dokumen.tips/documents/serikali-ya-mapinduzi-ya-zanzibar-hotuba-ya-makadirio-ya-mhe-dkt-ali-mohamed-shein.html?page=1>

RGoZ, 2020. Zanzibar Development Vision 2050: Responsibly transforming livelihoods. <http://planningznz.go.tz/doc/new/ZDV2050.pdf>

Sikinyi, E, 2009. Experiences in Kenya. Proceedings of the Second World Seed Conference. Responding to the changing world: The Role of new plant varieties and high-quality seed in Agriculture. FAO Headquarters, Rome, September 8–10, 2009. https://www.upov.int/edocs/pubdocs/en/upov_pub_354.pdf

The EastAfrican, 2016. Horticulture new hope for Zanzibar's agriculture. The EastAfrican, 14 May 2016. <https://www.theeastafrican.co.ke/tea/business/horticulture-new-hope-for-zanzibar-s-agriculture--1349970>

The EastAfrican, 2022. EAC rolls out plans for \$900m fruit and vegetable exports. The EastAfrican, 27 January 2022. <https://www.theeastafrican.co.ke/tea/business/eac-rolls-out-plans-for-900m-fruit-and-vegetable-exports-3696316>

USAID, 2020a. Feed the future Tanzania: Mboga na matunda. Quarterly Report #12. https://pdf.usaid.gov/pdf_docs/PA00WP5B.pdf

USAID, 2020b. Agro dealers survey report, November 2020. https://drive.google.com/file/d/1N_QvK5Lun2BwT528bv3A8Bspex4XhjGK/view

URT, 2003. The Seeds Act, 2003. <https://www.kilimo.go.tz/resources/view/the-seed-act-no.1-18-of-2003>

URT, 2013. Tanzania in Figures 2012. June 2013. https://www.nbs.go.tz/nbs/takwimu/references/Tanzania_in_figures2012.pdf

World Bank, 2005. The European horticulture market: Opportunities for Sub-Saharan African exporters. <https://openknowledge.worldbank.org/bitstream/handle/10986/7284/340510rev.pdf?sequence=1&isAllowed=y>

World Bank, 2017. Zanzibar poverty assessment. <https://documents1.worldbank.org/curated/en/778051509021699937/pdf/120689-WP-P164456-PUBLIC-11-3-17-25-10-2017-20-15-5-ZanzibarPovertyAssessment.pdf>

Zowan254, 2022. Kenya silently passes law criminalizing indigenous seed sharing. Cyprian Nyakundi, 8 April 2022. <https://www.cnyakundi.com/kenya-silently-passes-law-criminalizing-indigenous-seed-sharing/>



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