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Anti-corruption measures for reducing corruption in agriculture

Given the vastness of the agricultural sector, from small scale subsistence farming to large commercial plantations, understanding the sector's value chain to map appropriate corruption risks and anti-corruption measures can be a helpful exercise. Risks in agriculture can intertwine with other sectors such as land and water, which are vital inputs. Anti-corruption measures can include but are not limited to TAAPE (transparency, awareness, accountability, prevention, and enforcement), use of social accountability strategies, whistleblower protection and innovation in agricultural practices.

Caveat: the corruption risks and anti-corruption measures applicable to the agricultural sector in this paper are meant to be illustrative and not exhaustive. Contextual analysis is key to applying suitable anti-corruption measures to various corruption risks at different stages in agricultural production.

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Query

Please identify best practices that tend to be effective in reducing corruption in agriculture.

Contents

Background

"Agriculture is the art and science of cultivating the soil, growing crops, and raising livestock. It includes preparing plant and animal products for people to use and their distribution to markets" (Rutledge et al. 2011). As per this broad definition, the nature and type of agricultural sectors can vary, encompassing a variety of processes and actors depending on the context – from small-scale subsistence farming[1] to large commercial plantations[2] (Dastrup 2019, 6.2).

Under the vast scope of what comprises agriculture, areas including but not limited to "land title and tenure, credit availability, quality of supplies, water allocation, marketing, and the development of agribusinesses" can be affected by corruption (Fink 2002, 2). One method of gaining insight into how the sector works in a given setting is understanding agricultural value chains. Such knowledge can also be beneficial in discerning relevant corruption risks and anti-corruption measures applicable to different stages of the agricultural value chain.

MAIN POINTS

- Agriculture is a vast sector, from small scale subsistence farming to large commercial plantations involving various processes and actors depending on the context and produce.
- Value chain analysis of the agricultural practice in each context can be beneficial to mapping appropriate corruption risks and mitigation strategies.
- Anti-corruption measures can include but are not limited to TAAPE (transparency, awareness, accountability, prevention, and enforcement), use of social accountability strategies, whistleblower protection and innovation in agricultural practices.
- Contextual analysis is vital.

[1] Subsistence agriculture is the "production of food primarily for consumption by the farmer and mostly found in less developed countries (LDCs). In subsistence agriculture, small-scale farming is primarily grown for consumption by the farmer and their family. Sometimes if there is a surplus of food, it might be sold, but that is not common. In commercial agriculture, the primary objective is to make a profit" (Dastrup 2019).

[2] A plantation is a "large-scale farm that usually focuses on producing a single crop such as tobacco, coffee, tea, sugar cane, rubber, and cotton, to name a few. These forms of farming are commonly found in LDCs but are often owned by corporations in most developed countries (MDCs). Plantations also tend to import workers and provide food, water, and shelter necessities for workers to live there year-round" (Dastrup 2019).

Definitions

A **value chain** in agriculture "identifies the actors and activities that bring a basic agricultural product from production in the field to final consumption, where value is added to the product at each stage. A value chain can be a vertical linking or a network between various independent business organisations and can involve processing, packaging, storage, transport and distribution." The terms value chain and supply chain are often used interchangeably.

Traditional agricultural value chains are typically "governed by spot market transactions involving many small retailers and producers".

Modern value chains are characterised by "vertical coordination, consolidation of the supply base, agro-industrial processing and use of standards throughout the chain" (Westlake 2005, 17 and ILO 2010).

It is important to note that each agricultural value chain is unique and contains a distinctive combination of links/actors and stages, depending on the type of agricultural product and context at hand. For example, taking the case of the cassava value chain in the Tanzanian context, there are five stages or functions of the value chain (depicted in Figure 1), namely input supply, then production, then collection, then processing and then retailing.

The actors (depicted in blue in Figure 1) include but are not limited to farmers growing the cassava and the co-ops that they belong to or sell to, the traders, the processing companies, the various market players and consumers. These actors serve as the primary links in the value chain and can be involved in more than one stage of the value chain.

There are also supporting agencies for the actors outside the chain, such as research organisations, financial services, non-governmental organisations (NGOs), etc. All the while, the value chain exists in a certain environment or context, affecting its operations and functioning (Farm Radio International 2013, 2, 3).

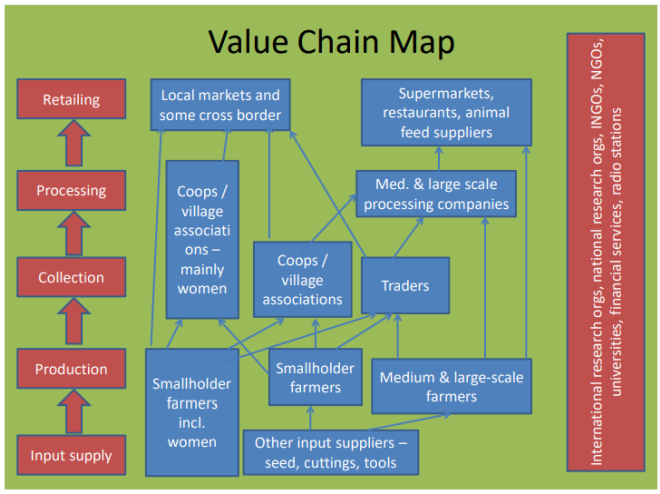

Figure 1: Value chain map for Cassava in Tanzania (Source: Farm Radio International 2013, 3).

As such, most agricultural value chains tend to have five stages: input, production, processing and packaging, storage and distribution, and end markets. Keeping the basic value chain structure for agriculture in mind, the following corruption risks may present at certain stages:

Input stage

The first stage of the value chain involves actors and processes necessary to kickstart the agricultural process. These include but are not limited to land and land-related facilities, such as irrigation, seeds, fertilisers, labour, financial support/services, i.e., subsidies and farm loans, licences, certificates, etc. (Cucagna and Goldsmith 2017; Abdulsamad et al. 2013; Farm Radio International 2013). Each of these elements can be at risk of being affected by corruption.

Land, for example, is a precious resource and prone to corruption risks surrounding land titles, tenures, illegal land grabbing, etc. A report from International Corporate Accountability Roundtable (ICAR) and Global Witness mentions land transfers and allocations without the consent of local communities in several countries such as Myanmar, Tanzania and Liberia (Schutter 2016, 12, 22, 23). Also, large scale agricultural development, which is a rapidly growing industry, "continues to probe deeper into Indigenous lands" (UN 2021). For example, in 2019, deforestation in the Amazon was at its height when compared to the previous 11 years. Forest fires were an important proximate cause of this phenomenon, but Indigenous groups and others have pointed to evidence that, behind this, were "deliberate attempt[s] by agriculturalists to open up their lands for agribusiness activities" (UN 2021, 35, 36; Teixeira 2019).

Moreover, small-scale producers from rural areas are at risk of encountering corruption related to land title and tenure, preventing them from improving their food security and productivity. The impact of corruption in the agricultural sector is magnified in developing countries due to the considerable number of small-scale landholders (who are often extremely poor). For instance, 80% of the farmland is managed by smallholders in sub-Saharan Africa and Asia, and they provide up to 80% of the food supply in those regions (Transparency International 2019).

Corruption in the allocation of government subsidies and subsidised credit, bribery in government contracts or licences for agricultural supplies are other risks (Zúñiga 2018, 2). For example, the abuse of European agricultural funds is deemed to be "widespread and a major concern" in Central and Eastern Europe. A European Parliament report looking at five countries — Bulgaria, Czechia, Hungary, Slovakia and Romania – states that European Union (EU) funds meant for medium and small-sized farms tend to "end up in the hands local oligarchs connected to political elites or big conglomerates" (Đorđević 2021).

Frequent fraudulent schemes involving other agricultural inputs such as seeds and fertilisers are also well known. Recently, reports emerged of a fertiliser scam in India amounting to INR500 crore (around US$66 million) involving the fictitious sale of over 23,000 quintals of subsidised fertiliser and its re-routing to the black market at double the price (Misra 2020).

Water is another crucial element at the input stage. A detailed study looking at irrigation management systems in India in the 1980s highlighted the systemic characteristic of corruption in the sector, involving several hierarchical levels. Contractors building and maintaining irrigation infrastructure had to pay bribes to engineers tasked with management. The contractors, in turn, profited by delivering substandard facilities. Engineers also extorted rents from farmers in exchange for receiving water on time or at all. Moreover, those farmers whose land was not formally included in the irrigation schemes were targeted for bribes in exchange for illegal water supply. The entire system was known to be vertically integrated, with proceeds of corruption going up the chain from the administrative to the political level, with control being established through the appointment and transfer of personnel (Tacconi and Williams 2020, 311, 312). Similar rent-seeking patterns during the same period were witnessed in Bangladesh, Indonesia, Nepal, the Philippines, South Korea, Thailand and the United States (Tacconi and Williams 2020, 312).

Production stage

Depending on the nature and type of farming practice and crop, the production stage can involve single farming units, cooperatives, large scale plantations, etc.

Enabling monoculture production in large plantations is often achieved via corruption. For example, Indonesia, which is the largest producer of palm oil in the world, has cleared large strips of its natural forests to enable palm plantations. Much of this process is fuelled by opaque deals[3] between private companies and government agencies without the involvement of local communities (Van Hagen 2021).

Cooperatives at the small and medium scale are also not free from corruption risks and are not only limited to developing or transition economies. In the US, for example, the general manager of Ashby Farmers' Cooperative Elevator in Minnesota stole from the cooperative, and the board members of the Tri-County Electric Cooperative in South Carolina enriched themselves with perks and benefits (Giannakas and Fulton 2020).

Corruption perceptions can also pose as an obstacle to farmers' involvement in conservation practices crucial for agricultural production. A study found that collective action challenges linked to corruption perceptions play a role in undermining farmer involvement in soil conservation committees in Kenya's Central Highlands.

Processing and packaging stage

The processing packaging as well as distribution and storage stage of the agribusiness[4] can involve several corruption risks such as in the licensing and permits for transportation, storage as well as the actual processing of the raw/unfinished agriproduct (Fink 2002, 4). "Middlemen" or intermediaries are known to set "almost give away" prices for the purchase of agriproducts from farmers while selling to consumers/secondary processers at "outrageous prices" (Oguoma et al. 2010, 77).

A study from the Nigerian context shows the challenges faced by individual/small-scale farmers' production – it is often dictated by contextual conditions such as weather and climate, especially in contexts of developing economies. Smaller producers also have little to no resources for the storage and handling of products post-harvest, which is especially troublesome for perishable products (Oguoma et al. 2010, 78). Such a scenario limits farmers' bargaining power with intermediaries and purchasers, and the latter is known to often take advantage of the formers' shortcomings. On the global scale, "concerns have been expressed about the unequal distribution of power in the agri-food chain," with farmers being "particularly disadvantaged in these power relations" (Malak-Rawlikowska et al. 2019, 1).

Storage and distribution stage

Apart from the risks mentioned in the aforementioned stage, theft and embezzlement are common challenges in the storage and distribution of agricultural products. For instance, storage

[3] For example, the Gecko Project, an investigative journalism initiative focused on "corruption driving land grabs and the destruction of tropical rainforests" reports on "opaque deals underpinning Indonesia's deforestation and land-rights crisis" (Gecko Project 2018). Adding that "tackling corruption is an essential precondition…to meet climate targets and resolve land conflicts" (Gecko Project 2019).

[4] The various businesses that are connected with producing, preparing and selling farm products (Cambridge Dictionary 2021).

managers in China's state-owned enterprise grain storage facilities of the Liaoning and Jilin provinces have been misappropriating and embezzling public funds by paying grain merchants the price of freshly harvested grain for old grain. Moreover, patronage systems operating on *guanxi,* or connections, determine procurement by grain storage units. Thus, local farmers without connections to sell to public distributors often have to sell to private merchants at discounted prices (Danning 2015).

End markets/consumer interface

Agricultural value chains are often complex and opaque, especially when it involves large international players (Transparency International 2019). The case of the horse meat scandal[5] from 2013 showcases this point. While the meat leaving Romania was labelled as horse, it was tagged as beef on reaching its final destination in France. Investigators found an extensive paper trail for the meat which "ping-ponged from Romania to the Netherlands, to Cyprus and, in at least one instance according to an investigation by the Organized Crime and Corruption Reporting Project (OCCRP), to the well known secrecy jurisdiction of the British Virgin Islands" (Transparency International 2019, Puiuleț et al. 2013, Lawrence 2013). The company involved in the scandal were also deemed to be non-transparent and set up in a way so as to not reveal the beneficial owners (Global Witness 2013).

Investigations into Welspun's 100% Egyptian cotton products revealed that a substantial portion of goods were made from inferior quality cotton, which was not sourced from Egypt. Given that the "cotton business is labyrinthine, and the supply chains of products – running from the source farm to the shop shelf – have grown increasingly complex", it was a challenge for the company to understand what had gone wrong (Subramanian 2021).

Sometimes companies dealing in food and agricultural products can operate outside the confines of the law due to their vast corrupt networks (Transparency International 2019). Commodities traders dealing in agricultural products stand out in this regard. The segment is monopolised by four major traders who control around 75% to 90% of the global grain trade (Lawrence 2011; Baines et al. 2021).

Commodity traders are known to operate in high-risk jurisdictions with weak governance, institutions, the rule of law and limited state accountability. The sector is "also notoriously opaque" and with poor regulations as well as inadequate levels of transparency and accountability (Chêne 2016, 4, 7). Commodity traders are also known to "promote corruption among elites who squander their countries' resources, involving themselves in all manner of scandals from the oil-for-food case in Iraq, to Operation Car Wash in Brazil" (Baines et al. 2021).

As mentioned, agricultural value chains can have varying stages and actors. For the purpose of this paper, illustrative anti-corruption measures that may be applicable to various aforementioned corruption risks manifesting at different stages of the agricultural value chain will be presented.

[5] It began in January 2013, when Irish authorities reported that they had found horsemeat in burgers that were supposed to contain 100% beef. The discovery resulted in extensive testing, and horsemeat was found in several meat products in countries all over Europe and beyond (FFA 2019).

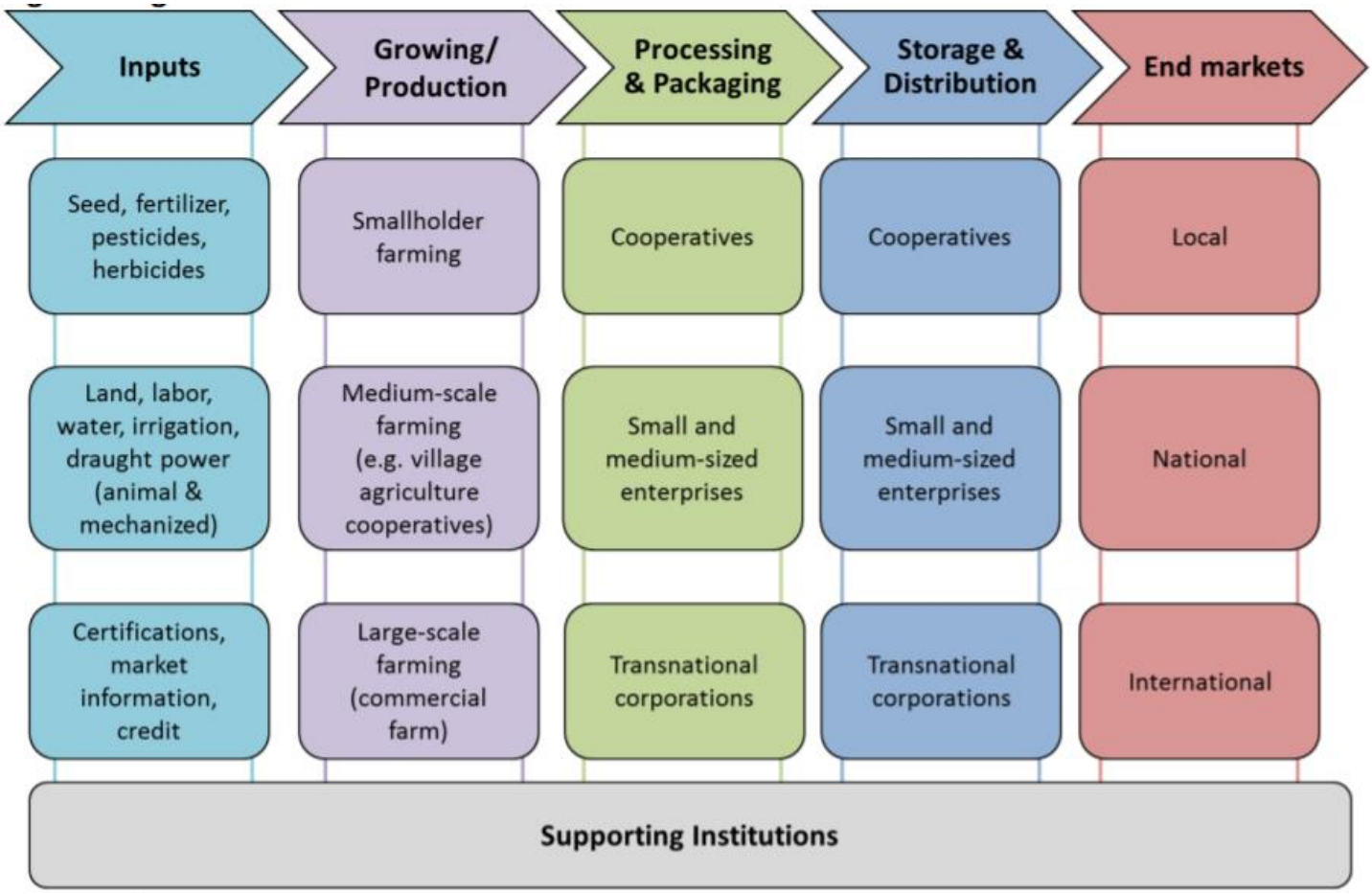

Figure 2: generic agricultural value chain (Source: Abdulsamad et al. 2013)

Vulnerable groups

It ought to be noted that when addressing corruption in the agricultural sector, it may be worthwhile to deploy an intersectional lens to understand how corruption affects vulnerable groups. Women face less favourable employment conditions than men in both traditional and modern agricultural value chains. In the Senegal tomato sector, for example, 2% of female workers and 28% of male workers have permanent contracts. Women are mainly hired for labour intensive, relatively unskilled manual tasks, while men's jobs often involve operating machinery. For example, in Kenya's fruit and vegetable export businesses, women constitute 80% of the workers in packing, labelling and bar-coding produce. Women also usually receive lower wages than men (Westlake 2005).

In Ghana, rural women constitute a critical source of labour in the area of agriculture. This means how they access, use and hold land is critical, considering the fact that land is a primary asset of production in dominantly agrarian communities (Yeboah et al. 2017). Women's access to land ownership, including their use of and control over land, is hindered by corruption in land administration, further exacerbating gender inequality in the area (Zúñiga 2018, 4). Women also face discrimination when it comes to bribery in land administration, and they may also be victims of sextortion, or sexual extortion, as well as violence (Zúñiga 2018, 5).

Climate risks

Sustainable agricultural practices are key to countering climate change. However, corruption also affects the "agriculture–climate change nexus" (Tacconi and Williams 2020, 313). When it comes to increasing unpredictability in crop yield, issues such as "widespread poverty, hunger, government corruption, gender inequality, and lack of education multiply food security issues around the globe" (Cartier 2021).

Illegally acquiring forest lands for agricultural use includes collusion between a variety of corrupt actors such as civil servants, government officials, judges and business owners. For instance, in the eastern Peruvian region of Ucayali, forests lands were illegally acquired to be used for the cultivation of palm and rice (Praeli 2018).

Corruption can also affect the implementation of sustainable agricultural practices. A ground-level example is the case of southern Benin, wherein small-scale farmers' lack of trust in the local government, emanating from perceptions of corruption, led to challenges in enforcing government led climate change adaptation measures (Tacconi and Williams 2020, 313).

Anti-corruption measures

While anti-corruption experts disagree on a single set of best practices for anti-corruption policies and strategies, scholars in the field agree that anti-corruption policies need to be customised to the particular context of operation (Heywood 2018; 91, Tacconi and Williams 2020, 309).

The previous section illustrated potential corruption risks that could arise at different levels of any given agricultural value chain, depending on various factors, including but not limited to the agriproduct, type of farming method, the operational environment and actors involved. Thus, anti-corruption measures aimed at reducing corruption in agriculture ought to address the specific corruption risks emanating from a given context. For example, measures to counter the undue influence of commodity traders would be different to those addressing bribery in land corruption at the input stage. The first step in this regard would be to conduct corruption risk assessments[6] to deploy appropriate anti-corruption measures suited to the challenge at hand.

A few illustrative anti-corruption measures for reducing corruption in agriculture are as follows:

TAAPE (transparency, awareness, accountability, prevention and enforcement)

A report from United States Agency for International Development (USAID) on corruption in agriculture states that efforts to counter corruption should emphasise TAAPE (transparency, awareness, accountability, prevention, and enforcement). A few strategies that

[6] For example, the World Bank's Agricultural Sector Risk Assessment: Methodological Guidance for Practitioners (2016), factors in corruption as a part of the enabling environment risk. Conversely, a mapping of corruption risks at each stage of an agricultural value chain can also be conducted.

could be applied in this framework are (Fink 2002, 10-11):

- Assess corruption in a context's agriculture sector by beginning at the market and working backwards to production (warehousing, transportation, licences, grading, etc.). Work to trim the commodity chain from the producer to the market by introducing contract arrangements between the farmers (for example) and the ultimate processor of the product. Replace potential areas for bribery with non-rent-seeking methods.
- Promote the development of a land market by eliminating corruption in the registration and titling process. Facilitate affordable and straightforward procedures for transferring land titles.
- Promote quality improvement centres (especially in the African context). Work with private and public groups to promote standards, grading and certification. Develop projects with producers' groups and involve all appropriate stakeholders. Develop a broad base of cooperating host workers.
- Design agriculture projects in a way that avoids rent-seeking via hidden subsidies.
- Promote oversight of all actors involved in critical decision-making roles.
- Corruption in agriculture can be reduced by thorough project selection and suitable procedures in project implementation. The key is to design programmes that have a broad range of support that, if appropriately implemented, can enhance the quality of life and reduce corruption. Complete disclosure between public and private sector actors (especially where farmers are well informed) can facilitate this cause.

The procedure established by a small women-run poultry cooperative in Swaziland serves as an example of employing the parameters for TAAPE. A simple accounting method for the cooperative was used, with transparency and access to information in the process. Each member maintained books and provided a monthly report to enable individual accountability. In cases where stakeholders were curbed by literacy in maintaining accounts, they were assisted by their children. Regular meetings with high participation rates were the norm. The cooperative also received technical support and training from the Ministry of Agriculture. Thus, transparency via open participation, access and information was established.

Accountability was an integral part of the process and built into each member's work as well as the central operations. Awareness of the happenings of the cooperative was a crucial element towards the success of this project. The project also had standards that were understood and open.

Corruption prevention was built into the design of the project. The entire strategy of the project was to decrease the tolerance for corruption by reducing and eliminating the chances for individual gain through corruption. Enforcement of this project was automatic as the rules of conduct had been established, which kept everyone informed of what was to occur (Fink 2002, 7-8).

Curb corruption in agricultural subsidies: use of social accountability strategies

Subsidies are often a key agricultural input. However, one of the side effects of subsidies is the encouragement of corruption by enabling opportunities for rent-seeking (Pearce and Finckenstein n.d., 185). A case from Malawi shows that corruption was the "*modus operandi* of a criminal network focused on fertilizer subsidies

that included chiefs, public officials, politicians, coupon printers, businessmen, and truck drivers" (Tacconi and Williams 2020, 313).

Given that rent-seeking and capture are largely means of maximising the transfer of resources to a group of special interests, "subsidy reform will inevitably conflict with those special interests". Thus, managing such a situation requires subsidy reform to be part of a wider programme of macroeconomic and political reform, including but not limited to programmes such as public awareness campaigns and efforts at political transparency and accountability (Pearce and Finckenstein n.d., 190). However, it may be naïve to assume that privatisation of the process will always yield results. Privatisation may create different avenues for rents or simply transfer rents from the public to the private sector (Pearce and Finckenstein n.d., 190).

Ghana introduced subsidies for fertilisers in 2008. The country's subsidy rate of 50% is the highest in West Africa and has facilitated smuggling to neighbouring countries. A loose coalition of civil society organisations (CSOs) instituted social accountability interventions in beneficiary communities to monitor the programme's implementation. Realising that much depends on the cooperation of public officials for the success of the programmes (i.e., getting access to expenditure and revenue data for budget tracking), the coalition deployed a collaborative instead of a confrontational approach. In situations where behind-the-scenes consultations failed to produce results, CSOs reached out to their media allies to "intensify pressure on the government, while taking pains to maintain the appearance of partisan neutrality". The coalition also improved the programme's operational design and increased citizens' awareness and participation in public affairs. Eventually, these interventions succeeded in reducing smuggling (Asante and Mullard 2021, 31-34).

However, the conciliatory approach of this programme also highlights some limitations that could come with the dependence on the goodwill of officials. These include deliberate delays from authorities "who could and often do, merely put up an appearance of compliance". Also, social accountability actors face considerable difficulties, including "logistical constraints, the personal costs of involvement in social accountability initiatives, and lack of legal backing". Such challenges are amplified in contexts where there is "complicity of political agents, public officials, traditional leaders, and community members in the diversion of subsidised fertilisers" (Asante and Mullard 2021, 31-34).

Donors can support this anti-corruption area by leveraging their influence with governments to enhance their cooperation with CSOs to "reduce the influence of potential detractors to reform". Incorporating social accountability measures into the design of agricultural programmes (especially as a part of standard monitoring and evaluation activities) have been known to show results. Initiatives such as formalised citizen feedback and regular forums/workshops, where representatives from civil society and formal agencies can work together to resolve obstacles to effective anti-corruption, could prove beneficial in this regard (Asante and Mullard 2021, 33).

Start at the origin: curb land corruption

Land is crucial for agriculture. Corruption related to land stems from "weak land administration systems, limited legislation, weak institutions, lack of transparency, lack of effective oversight institutions and reduced social participation"

(Zúñiga 2018, 11). Methods to counter land corruption can include (Zúñiga 2018, 11-19):

Understanding context in land use conflict

Often, natural resource management does not consider contextual realties for mapping corruption modalities. For example, in West Africa, the predominance of "belly politics",[7] especially with respect to rent-seeking by bureaucrats and elites in the handling (and perpetuation) of farmer-herder conflicts, has been documented by past research (Benjaminsen and Ba 2009, 72, 78). Addressing corruption in these contexts, therefore, requires a combination of structural and actor-oriented approaches, with more focus on the interdisciplinary understanding of corruption, political ecology, environmental degradation and marginalisation (Benjaminsen and Ba 2009, 79). A handbook on Land Corruption Risk Mapping, delineates methods of identifying and countering corruption risks in land governance (Tump et al. 2017).

Ensuring there are comprehensive legal and institutional frameworks to address land corruption

Often, there are new laws aimed at environmental protection and aimed at agricultural practices that are not harmonised with existing legislative standards.[8] For example, in Africa, such disharmony created confusion, duplication of authorities and conflict between central and local governments in several jurisdictions. Thus a "comprehensive governmental approach" is required to "consolidate related policies, legislation and institutions, and connect them to a unique strategy" to enable the delivery of anti-corruption results (Zúñiga 2018, 11).

Organising land management

Good practice in the reform of land management is to simplify the administrative system, reducing steps and preventing opportunities for corruption (Zúñiga 2018, 12). In the past, reports from several African countries emerged that the cadastre was incomplete or inadequate, which could open land management to corruption risks (Arora 2011).

Centralised land management can be appropriate when needs are homogenous and beneficiaries are dispersed across wide geographical areas. Decentralisation can be considered when local demands vary throughout the country. This form of management requires robust local institutions, and it is more flexible in adapting processes to local characteristics and traditions.

Cases from Africa show two models of operation for land administrative tasks – one focusing on the role of new local level institutions and the other increasing the role given to traditional institutions, such as customary chiefs, especially in land conflict management. Another option is the privatisation of land services, appropriate for contexts with complex and inefficient bureaucracies. However, in this case, the corruption challenge is the possibility of allocating contracts to private companies based

[7] It is a Cameroonian expression that was further articulated by Bayart (1993). It "is a complex mode of government' that denotes 'the accumulation of wealth through tenure of political power (implied in the proverb "the goat grazes wherever it is tied")' (Bayart et al. 1999, 8). This form of government has also been referred to as the neopatrimonial state "in which officeholders systematically appropriate public resources for their own uses, and political authority is largely based on clientalist practices, including patronage, various forms of rent seeking, and prebendalism" (Benjaminsen and Ba 2009).

[8] Disharmony is also known to occur between traditional laws/customary tenure systems and statutory laws (Knox et. al n.d., 1).

on personal interests rather than on merit (Zúñiga 2018, 12).

Increasing transparency

This can be achieved via the full public disclosure of documents about investment deals (final contract, bids at land auctions, changes in land use plans) and land title certificates. Transparency should be enabled by authorising public access to land administration documents, such as maps, land and urban plans, and appropriate accountability institutions' reports. For example, in Albania, local governments must first present to the Council of Ministers a list of properties that they want to have transferred to their jurisdictions from public state land (Zúñiga 2018, 13). Other solutions to increase transparency include technology driven solutions promoting open data to counteract land corruption. However, these initiatives must be "grounded in local contexts to ensure uptake, usability, and effectiveness" (Land Portal 2021).

Promoting accountability

This can be achieved by including strong and effective oversight institutions, such as parliamentary committees, anti-corruption commissions and law enforcement bodies. To secure institutional accountability, measures such as financial inspections and independent audits of land surveyors, as well as public reviews of compensation plans by independent committees, could be deployed.

Lastly, the use of social accountability tools can yield positive results, especially in contexts with a systematic problem of corruption and a weak institutional system. For example, the anti-poverty policy Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in India contains strong transparency mechanisms, like mandatory social audits (Zúñiga 2018, 14).

Ensuring participation

Increasing the participation of political parties and citizens in land governability would improve the compliance of those actors with the policy (Zúñiga 2018, 14). Participation ought to be active and include the voices of local communities and vulnerable groups, such as women, and the Indigenous communities affected (Rahman 2021, 6; Zúñiga 2018, 2). For instance, Transparency International Uganda organised a series of open days that provided citizens a forum to "verify land titles, access free legal advice and engage with organisations that support people affected by land corruption" (Chibamba et al. 2019).

Geographic information systems (GIS) and cadastral mapping,[9] as well as community based counter mapping

Good land management involves keeping an accurate track of all the information available about a certain property and its changes over time – GIS and cadastral mapping could be used to this end (Sidiq 2021, 190). In Tanzania, coarse images combined with ground-truthing GIS technology helped reveal that up to 60% of properties in secondary cities were not on the tax roll (Zúñiga 2018, 18).

[9] The term cadastral describes the "type of GIS dataset or map that contains property line information. For example, a cadastral map is a map showing the parcels and ownership information for a given area."

However, community based counter mapping[10] is also proven to be a useful tool (Sidiq 2021, 190). In Indonesia for instance, as a part of the reconstruction process after the tsunami in 2004, the identification of boundaries and property claims were left to the community, with the help of some CSOs, in an initiative known as "community land inventory". This exercise was undertaken to ensure transparency, prevent corruption and protect the rights of the people (Zúñiga 2018, 15).

Improving human resources management

The dissemination of guidelines, codes of conduct and ethics, staffing procedures and a clear establishment of sanctions can help counter rent-seeking behaviour in the sector. For example, the NGO, Accountability Lab Nepal, runs a popular contest, Integrity Idol, to publicly reward public officials who have stood out for their integrity and service to society. While the initiative is not aimed directly at the land or agricultural sector, it has been successful in promoting integrity among public officials and is being replicated in Pakistan, Mali and Liberia (Zúñiga 2018, 16).

Gender sensitive approaches

The previous sections have highlighted how vulnerable groups, such as women, can especially face greater risks of corruption. Women also face a greater impact when it comes to land corruption. Thus, the inclusion of gender perspectives is crucial in adequately addressing corruption in this segment. The first part of the problem includes diagnosing "the problem of land corruption to make the distinctive impact of land corruption on women visible". Such an exercise could include gathering gender-disaggregated data on access to land and security of tenure and by fully understanding how land corruption is differently experienced by men and women (Zúñiga 2018, 17).

Therefore, gender sensitive measures need to be included in the design and implementation of policies, laws, assistance, messages and procedures associated with land. In this regard, the Global Land Tool Network (GLTN) has developed "gender evaluation criteria".[11] to assess whether tools to promote general land rights are sensitive to gender (Zúñiga 2018, 17). A handbook on Women, Land and Corruption provides practitioners and policymakers with resources to address these issues while informing effective policymaking (Arson et al. 2018).

Addressing ancestral land rights

There have been cases, such as with the Alto Tamaya-Saweto territory in Peru, where corruption enabled transfer of ancestral land belonging to Indigenous populations for agricultural activities, illegal logging and drug trafficking (Transparency International 2021). However, another example from Indonesia's West Papua province shows how land mapping processes involving the Indigenous community can support the recognition of ancestral land[12]. Such recognition is a vital step in Indigenous communities managing their own

[10] Counter mapping is part of a broader category of participatory mapping or citizen mapping.

[11] The criteria include participation (equal participation by women and men and gender-responsive governance), capacity building (empowerment of both men and women to use and benefit from tools related to land), legal and institutional considerations (protection of legal rights reducing discriminatory prejudices and practices against women), economic impact (issues regarding the access of men and women to land), and scale and sustainability impact to reach more women than men (Zúñiga 2018, 17).

[12] Only the local administration has recognised the Indigenous populations' ancestral land rights so far, formal recognition from the central ministry is pending (Jong and Yewen 2021).

forests and making land use decisions for agriculture (Jong and Yewen 2021).

Countering irrigation related corruption

Water is another crucial element in agricultural production. Irrigation that enables an adequate supply of water for agriculture activities faces myriad corruption challenges, as illustrated in the aforementioned section.

Principal actors	Risk area	Corruption risks
Public actors (and donors)	• Policy making • Regulation • Planning and budgeting	• Distortion in decision making on groundwater management by local politicians (bias towards short-term benefits)
Public and private actors	• Construction	• Drilling of illegal tubewells
Public actors and water users	• Payment for services • Implementation of regulation	• Avoiding compliance with regulations on groundwater use • Falsification of documents to conceal tubewell connections • Over-pricing of water by tubewell owners

Figure 3: main corruption risks in public canal irrigation (Source: Gonzalez de Asís et al. 2009).

Given that the irrigation sector is diverse and each type of irrigation system runs different risks, addressing corruption in this area requires mapping measures to the context at hand (WIN 2011, 16). Nevertheless, a few anti-corruption measures could include (WIN 2011, 16):

- Use of Integrity Pacts as an anti-corruption tool. This can be implemented at the beginning of the irrigation project to counter the "under-performance of construction companies and the inflation of construction costs".
- A civil ombudsman can help to look into reports of corruption in irrigation management.
- Using social accountability initiatives such as citizen feedback/scorecards to understand the modalities of corruption operating in the sector.

As mentioned in the earlier sections, small-scale landowners and farmers in rural areas can be "extremely poor" and be trapped in a corruption cycle. Thus, in addressing corruption in this sector, it is important to note that "when fighting corruption is a goal in itself, the poor might suffer even more". Strict bans could be counterproductive as they could result in loss of livelihood for farmers. Anti-corruption measures need to be well-defined to counter such an effect, especially for informal irrigation practices. Thus "anticorruption strategies need to empower the poor to defend their own interests" (WIN 2011, 17). Farmers should be directly involved in monitoring activities (Godson-Ibeji 2016, 545).

For example, in Barind, Bangladesh, a group of farmers can apply to dig a tube well. Part of the cost is borne by the farmers, and the rest is recovered via amortisation. The wells have pre-paid metres that charge farmers per consumption and act as an "innovative solution to render groundwater use transparent and regulation accountable". While there are environmental clauses, such as minimum distance to another tube well, due to limited control of local authorities on private drilling, the long-term sustainability of groundwater in the region could be at risk (WIN 2011, 13).

Innovation to counter corruption

Harnessing the power of new technologies can be effective in countering corruption in the agricultural sector. For example, the Nigerian government was faced with the challenge of middlemen siphoning off a majority of farm subsidies for fertilisers and grain. With the introduction of electric wallets, farmers could directly receive digital vouchers on mobile phones to buy fertilisers and seeds (Nkombo 2018). Other techniques of applying innovation to farming

techniques can include implementing programmes on good agricultural practices (GAP) and increasing technical knowledge. The Master Training Programme, part of the GIZ Cashew Initiative (ComCashew), creates a bank of qualified experts in the cashew value chain to promote knowledge exchange, learning and innovation within the cashew sector in Africa. These experts then go on to train other farmers (A4SD n.d.).

Support farmers' institutions to function effectively and hold the government to account

While several African countries have concrete agricultural policies, it is at the implementation stage where corruption seeps in. In such scenarios, well informed farmers unions and institutions are better able to hold governments to account for poor service provision. ActionAid Denmark empowered farmers from the Luapula and Lusaka provinces of Zambia to organise their collective voice and helped them to track agriculture budgets and services at the local level. These district farmers' organisations continue to "remain formidable local institutions" (Nkombo 2018).

Whistleblowing programmes

Hotlines and mailboxes can be used as anonymous methods of reporting corruption and lodging formal complaints. These options should be clearly communicated to the citizens, and systems should be established to respond to the public and to follow up on the complaints (Zúñiga 2018, 15). Whistleblower mechanisms could also be designed to be sensitive to gender differences. For example, mobile units and face-to-face communication is often preferred by women when reporting corruption (Zúñiga 2020, 8).

Spreading awareness: use of radios

Radios are relatively cheap and easily accessible and repaired. In several African countries, radios serve as the primary means of communicating crucial political and religious messages. For instance, radios surpass TVs and mobile phones in West Africa. Thus, they can serve as an effective anti-corruption tool. For example, in Malawi, the Development Communications Trust broadcast a programme known as village voice, which holds corrupt actors to account at the local level. The accused actors are also given a chance to come on air to address the allegations and remedial plans while having a dialogue with the community (World Bank 2017).

Commodity supply chain traceability

Commodity supply chain traceability involves the capability to access any and track all information about a product throughout its life cycle and along the supply chain by using a system of recorded information. It typically involves the use of quality assurance system that regulates standards, procedures and types of data to be recorded (Williams 2021). By fostering "monitoring systems, allowing access to data, and enabling greater scrutiny from civil society, law enforcement and from the public" such traceability initiatives, while not being specifically designed for the purpose of anti-corruption, can, in theory, support checking corruption in supply chains (Williams 2021).

However, in the context of under-resourced jurisdictions, such traceability measures need to overcome practical challenges from high costs of investments as well as the establishment of common goals between public and private actors. Also, traceability measures cannot stand as replacements for the overall efficacy of natural resource management and governance (Williams 2021).

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