

# PROMOTING SUSTAINED GROWTH IN GRAIN SUBSECTORS IN ZIMBABWE: EXCHANGE INFRASTRUCTURE CAN BE TRANSFORMATIVE



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## Acknowledgements

We acknowledge the financial support from the Government of the United Kingdom through the Foreign, Commonwealth and Development Office (FCDO) (formerly the Department for International Development-DFID) which has been funding the Zimbabwe Livelihoods and Food Security Programme (LFSP), and the United Nations Food and Agriculture Organisation (FAO) in Zimbabwe which has been managing the Agricultural Productivity and Nutrition Component. Finally, but not the least, we appreciate the cooperation and participation of the various stakeholders during the preparation of this investment plan without which, this work would not have been successfully conducted.

**About LFSP:** The Zimbabwe Livelihoods and Food Security Programme (LFSP), Agriculture Productivity and Nutrition Component (APN) is managed by the Food and Agriculture Organisation of the United Nations (FAO), with the aim of contribute to poverty reduction through increased incomes for a target 250,000 smallholder farming households. The programme is being implemented in four provinces covering 12 districts as follows: Mutasa, Mutare, and Makoni in Manicaland; Guruve, Bindura, Mazowe and Mt Darwin in Mashonaland Central; Kwekwe, Gokwe North, Gokwe South and Shurugwi in Midlands and Zvimba in Mashonaland West provinces. FAO is in partnership with three NGO consortia led by Practical Action, Welthungerhilfe and World Vision International, two Strategic Technical partners i.e. IAPRI for policy influence, HarvestPlus for biofortification, three Commercial Banks, 1 Wholesale Facility - the Zimbabwe Microfinance Fund (ZMF), 5 Microfinance Institutions (MFIs) and the USAID managed DCA Facility. To date the LFSP is funded for two phases to the tune of £72.4m.

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**Publication date:** 18 April, 2021

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## **1. Introduction/background**

The Zimbabwe Mercantile Exchange (ZMX) was officially launched on the 30<sup>th</sup> of April 2021 as an initiative which can help in transforming the agricultural sector in Zimbabwe. This policy advisory note discusses what is required to ensure that key actors in agricultural value chains in the country including especially smallholder farmers, can obtain maximum benefits from the operations of ZMX. The note covers a brief overview of Zimbabwe's agriculture sector and the role the exchange can play in addressing some of the challenges in the sector. Also It goes further to discuss factors which can impact on the viability of ZMX and suggests pragmatic solutions to the identified bottlenecks.

ZMX has been established through a public-private partnership involving the Government of Zimbabwe and the following: Financial Securities Exchange Limited (FINSEC), TSL Limited and CBZ Holdings Limited. The Food and Agricultural Organisation (FAO) and Indaba Agricultural Policy Research Institute (IAPRI) provided support in the form of research to underpin policy formulation, including strategies which will ensure that smallholder farmers can benefit fully from the activities of ZMX. The exchange is to be anchored to a warehouse receipt system (WRS) which facilitates formal trade in commodities as well as access to agricultural finance.

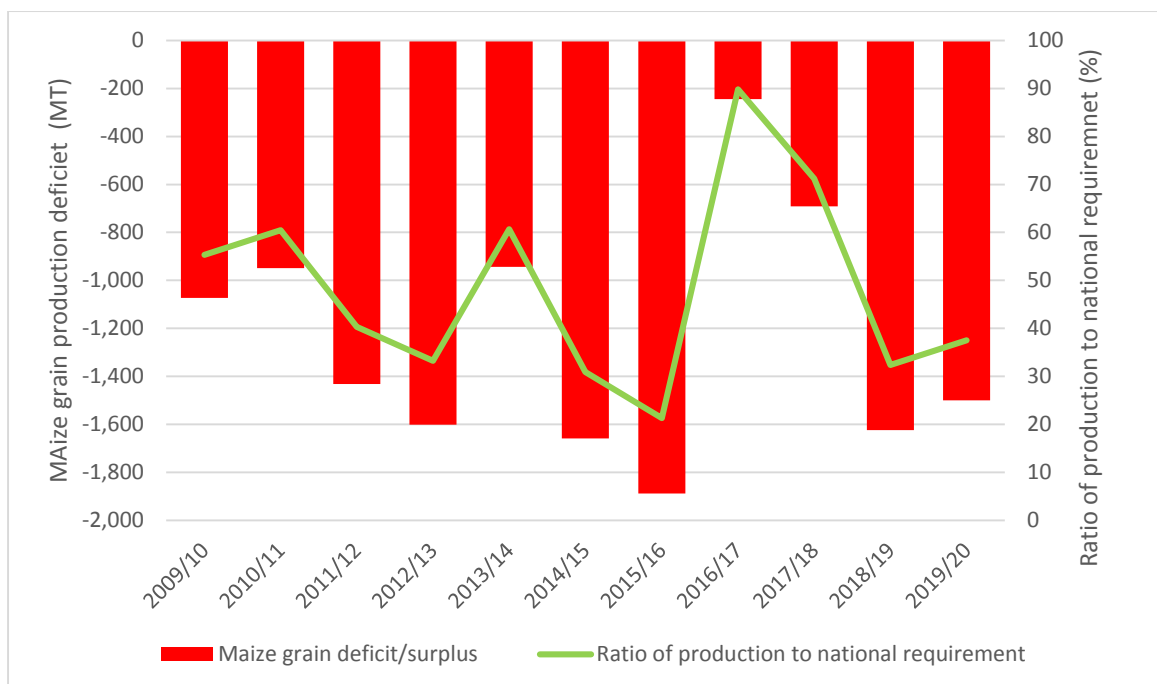
## **2. Agriculture and food security in Zimbabwe**

Agriculture is the central pivot of the economy of Zimbabwe. It accounts for about 17% of the country's GDP and 40% of export earnings whilst employing 60-70% of the population. The sector is crucial to rural livelihoods as well as efforts to assure food security and poverty reduction. However, its performance has been hampered by a number of factors, including climate variability, limited access to inputs and finance, output marketing and physical infrastructure challenges. Smallholder farmers who produce over 70% of the major staple food are often the ones most severely affected by these problems.

### **2.1 Zimbabwe's structural deficit in food production**

Data published in 2020 by the Ministry of Lands, Agriculture, Fisheries, Water, and Rural Resettlement (MLAFWRR) shows that one of the main development challenges facing Zimbabwe is that of addressing a structural deficit in the production of major staple crops such as maize, wheat and soya. For instance, as depicted in Figure 1 below, total maize grain output in the country has on average met just about 50% of domestic demand over the period from 2010 to 2019. This is based on estimated total domestic demand of 2.4 million tonnes of maize grain per annum. For wheat and soya, official estimates of annual domestic demand is about 450,000 tonnes each. However, during 2010-2019, average domestic output of wheat and soya accounted for only 35% and 20% respectively of estimated demand.

Relying on imports to fill the supply gap is not sustainable, largely because the country has challenges in generating sufficient foreign exchange. This situation increases vulnerability to food insecurity in terms of the availability of staple grains (maize and wheat). It also means that the supply of feed for the poultry and livestock industries is affected leading to increased risk of nutrition insecurity as a result of supply limitations and affordability challenges as prices for animal proteins rise.



*Figure 1: Trends in Maize Surplus/Deficit and ratio of maize production to national requirements*  
 Source: Zimbabwe National Food Balance Sheets

It is apparent from official data that crop yields in the country have either stagnated and/or declined over the past two decades. Climate variability especially recurrent drought maybe a contributory factor, but it is apparent that other structural constraints are stifling productivity in the food subsectors of the country. Producers, especially smallholder farmers have problems in accessing farm inputs and finance.

## 2.2 Government action to boost agricultural output and productivity

The Government of Zimbabwe has in recent years been implementing a number of programmes and policies to transform the sector. An example is the New Agriculture and Food Systems Transformation Strategy which was launched by the President in August 2020. The main components of these programmes include both input support and output marketing.

### 2.3 Inputs subsidy programme

Since 2000, the Government of Zimbabwe has been distributing heavily subsidised inputs to farmers, in particular seed and fertiliser. Despite substantial resources invested by the Government in inputs subsidy, the discussion in Section 2.1 shows that it has not stimulated the anticipated growth in farm productivity. One reason may be leakage from the system which makes it difficult for the target producers to access inputs supplied by the government. This is a common problem in many African countries in particular neighbouring Southern African countries.

Quite often, target households are unable to take up inputs provided because of liquidity problems which are usually very acute during the planting season. Most smallholders cannot access finance because they have limited access to banking facilities, including mobile banking facilities. They also tend to be excluded from access to credit because they lack suitable collateral. Most banks in the country are unwilling to accept even Government “offer letters” as collateral for loans.

## 2.4 Output marketing interventions

The Government of Zimbabwe has been heavily involved in the marketing of selected strategic agricultural commodities. For instance, Statutory Instrument (SI) 145 (Grain Marketing – Control of Sale of Maize – Regulations 2019) establishes control over marketing of maize grain by the Grain Marketing Board (GMB). GMB has the monopoly to purchase all uncontracted maize from farmers and the SI imposes limits on volumes which producers can transport from one area to another to 250kg. Non-compliance can lead to confiscation of the stocks. However, SI 145 allows for sales to contracting parties such as National Foods. Recent SIs extend public sector control over crop marketing to soya beans (Grain Marketing – Control of Sale of Soya Beans – Regulations 2021: SI 97 of 2021) and also over cotton (Grain Marketing – Control of Sale of Cotton – Regulations 2021: SI 96 of 2021).

Domination of produce marketing by the public sector has significant fiscal implications. From 2010 to 2019, GMB procurements accounted on the average for close to 60% of domestic maize grain output. The impact of this on public finances is illustrated in Box 1 below.

### Box 1: Impact of GMB grain procurement on public finances

According to official data, GMB in 2019 procured about 1.15 million tonnes of maize grain at about US \$256.70 per tonne. Total outlay by GMB on maize procurement alone is, therefore, estimated at US \$295 million. Respective GMB spending on procurement of soya and wheat were US \$13 million and US \$12 million, bringing the total spent on these three crops to about US \$325. This amount is equivalent to about 32.9% the total agricultural budget for 2019 (i.e. almost one-third of the budget of about US \$990 million).

Data source: MLAWR (2020).

In 2021 Zimbabwe anticipates a bumper harvest of between 2.5 and 2.8 million tonnes of maize and GMB is projected to buy about 1.8 million tonnes. At the pre-announced price of ZWL32,000 (equivalent to US \$378) per tonne. GMB spending on maize grain procurement will balloon to almost US \$680 million (more than double the spending in 2019). This can deepen fiscal pressures on Government and create liquidity problems for GMB. Any payment delays resulting from this situation is likely to create or deepen liquidity problems in producer households, making it difficult to meet household consumption needs. Furthermore, it can cause loss of value to producers due to the high rate of inflation in the country (officially estimated at about 220% per annum).

## 3. How the emerging exchange can help transform Zimbabwe's agriculture

To ensure that it is functional, the ZMX requires an ecosystem which guarantees delivery of and payment for traded commodities. This ecosystem, as noted by Onumah (2011), consists of a delivery system anchored to three main things, namely a credible WRS, a bank-based settlement system which ensures timely payments to sellers and an enabling policy and regulatory environment.

### 3.1 WRS is a critical foundation for exchange trading

Coulter and Onumah (2002) identified the following physical and institutional infrastructure as critical to the functioning of a WRS under which transferable/tradeable warehouse receipts are issued to back exchange trading:

- A network of licensed, certified silos or warehouses is needed for storing commodities in a manner which minimises in-store losses in terms of quantity and/or quality. The facilities should have suitable equipment for weighing and grading commodities and be run by well-qualified personnel. Owners or operators of the facilities should also have sufficient capital to cater for losses which may occur. GMB already has storage facilities which are suitable for this purpose.
- Grain/commodity quality standards, which apply in the formal trade in the country can be enforced under the WRS, ensuring not only the storability but also ease of sale in the formal, quality-sensitive market.
- An independent regulatory authority which will robustly enforce warehouse receipt legislation and regulations, including a licensing or certification framework which ensures that only well-qualified and adequately-capitalised operators are authorised to store on behalf of third parties. GMB can be one of the licensed/certified operators. Private operators who own or can lease suitable facilities can also be licensed/certified.
- Warehouse receipts issued should be credible and confer legal rights to enforce delivery by holders and/or transfer of title by means of trade. Electronic receipts are becoming quite common in Africa but some countries continue to issue paper-based receipts.

If these key building blocks are in place, the WRS will allow for stocks to be traded without direct interaction between trade counterparties as it occurs on any functional exchange. It is expected that ZMX would have a platform (either electronic or open outcry) for executing trades. Trading would be based on clear, robustly-enforced rules which ensure transparency. ZMX would also have a bank-based clearing and settlement system which guarantees payment to sellers. A reliable market information system (MIS) is also needed to ensure that trade counterparties are able to make sound marketing decisions.

### **3.2 Potential for positive change in government involvement in grains subsectors**

The emergence of ZMX/WRS opens up an important opportunity for Government to reconfigure how it intervenes in the major food staples subsectors. The change entails relying more on the market in pursuing its food security policy objectives i.e. leverage ZMX in grain procurement and sales. It is expected to generate multiple benefits such as easing the fiscal burden by encouraging injection of private sector resources, including finance into critical activities in the food value chains. Potential savings in public resources can then be invested in strategic public goods and services which will boost growth and productivity as well as enhance efficiency at other levels in the food value chains. The specifics include the following:

#### **a) Shift to transparent pricing – a gain for government:**

The current system of setting grain prices administratively often means slow adjustment to domestic supply conditions. This sometimes leads to GMB's producer prices being higher than import parity prices relative to supplies from neighbouring countries. The incentive regime created by this arrangement encourages informal cross-border inflows which entail a form of subsidy to value chain players in the neighbouring countries, at a time when Zimbabwe can ill-afford it.

#### **Box 2: Transparent price discovery through ZMX**

Transparent producer price discovery can be achieved through a "reverse auction" system where sellers compete on lowest possible prices to sell to Government. This system has been successfully

piloted for grain procurement by the WFP in Malawi and Zambia. GMB sales to millers and processors will also be made by means of competitive bids by millers and processors, who will be better-placed to exercise control over their procurement process. They can take advantage of available inventory financing to stockpile grains and stabilise the cost of raw materials, making it unnecessary to lobby for grain price subsidies.

**b) Strain on GMB procurement capacity can be minimised:**

Setting high producer prices, as discussed above can lead to over-supply to GMB especially at the opening of the marketing season when market prices tend to be at their lowest. The strain can cause political and economic problems if large numbers of smallholders are unable to sell to GMB. The WRS anchored to ZMX can help address this problem through a system which allows GMB to effectively become a “buyer of last resort”. This will involve the following mechanism:

- ✚ GMB sets a floor price for grains, guided by historical price trends rather than a production cost-based formula. The floor price is enforceable to all producers who deposit grains under the WRS. GMB will, however, not be required to pay that price at the opening of the marketing season but rather at a future date (3-4 months into the marketing season).
- ✚ Farmers who are willing to wait for payment at this future date can take advantage of the price guarantee to borrow against their deposited stocks. Lending risks will be low as the value of the collateral is secured by means of the assurance that grain stocks will be preserved (in quantity/quality) and a minimum price-based value can be determined. The inventory credit obtained will ensure that producer households can meet consumption needs without much disruption.
- ✚ The extra time space will allow GMB to mobilise resources to effect timely payment when it procures a key requirement for using ZMX for trading. It also minimises crowding out of private buyers.
- ✚ However, if Government needs to increase the volume of grain stocks it requires, it would be able to exercise “first right of refusal” for stocks for the depositors who take advantage of its guarantee of a floor price.

Eventually, as ZMX matures, it will be possible to trade futures/options contracts which allows farmers and other depositors to manage price risk without relying on Government backing, offering an important exit strategy for GMB and Government.

**c) New inputs financing systems will emerge:**

Inventory collateralisation is one of the well-known benefits of WRS, which will flourish when the operations of ZMX eases liquidation of stocks. However, a recent successful pilot by the Zambia Agricultural Commodity Exchange (ZAMACE) – summarised in Box 3 has shown that the WRS can be leveraged directly to facilitate distribution of inputs on credit, including smallholder farmers.

**Box 3: Farmers buy inputs on credit secured against grain stocks**



Farmers are often under pressure to sell their produce soon after harvest not only to meet household consumption needs but also to pay of loans taken for production (e.g. to acquire inputs, even if subsidised). To ease this problem, some farmers using the WRS managed by ZAMACE, deposited grain stocks in certified warehouses. Major inputs distributors sold inputs to these on credit, which was repaid after sale of the grains late in the marketing season when prices were significantly higher than during the period immediately after harvest (when prices usually bottom out). There was low risk of default because the collateral was well-secured. The cost of borrowing was far lower than prevailing interest rates – limited mainly to storage cost and the cost of setting up and monitoring the contracts. It turned out a win-win for farmers and inputs distributors. Farmers had low-cost access to inputs which were delivered on time whilst the participating inputs distributors were able to secure an increase in market share. It is feasible to replicate this case in Zimbabwe.

#### d) Reducing postharvest losses:

A shift from storing at the household level to formal warehousing by smallholder farmers has the potential to significantly reduce postharvest grain losses in the country. The African Postharvest Loss Information System (APHLIS) estimates postharvest loss in Zimbabwe for maize in 2018 at about 16%, which translates to over 183,000 tonnes of maize grain. This loss is equivalent to the annual energy (kcal) requirements for over 1,560,000 children under five years old. The financial value of the loss is equivalent to more than US \$52 million. Section 3.3 shows how smallholders can access the WRS and thereby reduce postharvest losses.

### 3.3 How will smallholder farmers benefit?

Experience from other African countries such as Tanzania shows that though many consider access to inventory credit as the primary benefit from a WRS, it is the market facilitation function which has proved most attractive to farmers. Figure 2 shows the type of inclusive system which will make it possible for smallholders to sell through ZMX.

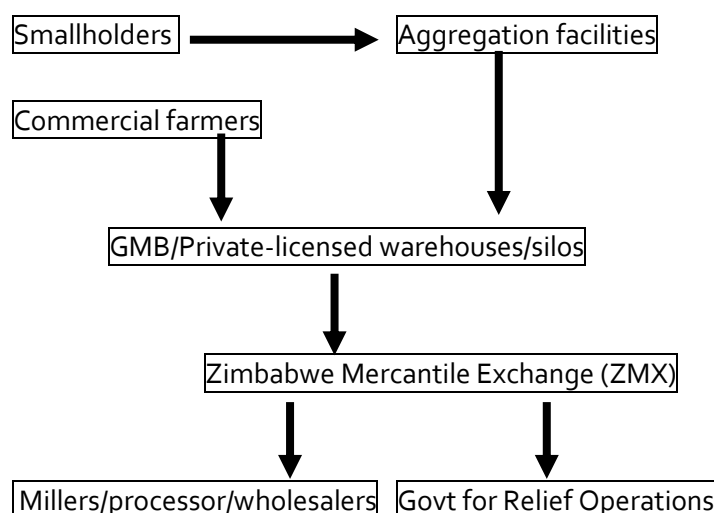


Figure 2: Process flow from grain producers to buyers through ZMX

Since their average output is rather low (estimated at about 5 tonnes per household), it will be uneconomic for them deposit directly under the WRS. Furthermore, the quality of their grains is likely

to be rather variable, thereby increasing the risk of rejection when they attempt to deposit under the WRS. These challenges can be overcome if they can take advantage of Aggregation Centres (ACs) located in rural communities (e.g. in Figure 3). The ACs are close to smallholders and usually have small-size stores with basic equipment for weighing and quality assurance (e.g. moisture meters). They also tend to have drying platforms and basic sorting facilities, which smallholders can use to recondition their grains to ensure compliance with required standards. The ACs allow smallholders to bulk and deposit grains of same quality into designated GMB and private storage facilities.



*Figure 3: AGRA-funded rural grain aggregation centre in Kenya*

Most commercial producers do not need to use the ACs as they can deliver sizeable volumes (at least the average truckload) and would have on-site facilities for drying, cleaning and conditioning their grains to meet set standards. The benefits that commercial farmers will obtain in using ZMX/WRS include certainty about payments and the ability to structure their marketing without risking liquidity problems because they can access inventory finance.

For major buyers such as processors and exporters buying through the exchange can shorten the distribution chain through eliminating some intermediaries especially when procuring from smallholders. This will lead to reduction in the overall cost of procuring grain. It will also not be necessary to hold huge stockpiles of grain inventories because access will be assured and stock-based forward contracting can be used to minimise price uncertainty.

It is expected that GMB and private licensed warehouse/silo operators will provide storage services. This will boost grain storage as an industry, creating both skilled and unskilled jobs as well as attracting significant private investment in storage infrastructure and equipment as it has occurred in Zambia. The ACs which will be linked to the WRS can also be used for distribution of inputs to

smallholders and training them good agricultural practices (GAP). A positive impact on farmers' product is therefore expected.

#### **4. The critical next steps**

The discussions in this policy advisory note have shown that the launch of ZMX anchored to the WRS is likely to generate significant benefits which have the potential to transform Zimbabwe's agriculture sector. It will improve grain marketing in the country and increase margins for smallholders as they trade via a shortened distribution chain. As ZMX matures, it will be in a position to offer market-based price risk management instruments for farmers, trader and processors in the form of futures and options contracts. The emergence of a formal grain storage and handling industry will also help reduce postharvest losses, improving food availability and reducing the food imports bill.

Government's strategic partnership in the establishment of ZMX is particularly insightful in view of anticipated fiscal and other development benefits. For instance, it allows government to streamline the operations of GMB as well as reconfigure its interventions in agricultural inputs/output markets. The policy shift will ease the burden on the Government's budget but will not compromise its effectiveness in managing food security and enhancing the welfare of smallholders. This is because the Government would be able to use policy levers which do not create distortions and crowd the private sector out. In particular, inventory finance will be available to enhance liquidity in the grain trade. There is also potential to interlock inputs credit with inventory-backed finance, the viability which has been demonstrated in Zambia. The recommendations outlined below will help in realising these benefits.

##### ***a. Independent regulatory authority for the WRS***

Confidence in the WRS is critical in encouraging farmers and traders to deposit grains in the designated facilities as well as in attracting inventory finance. Without a credible WRS which guarantees delivery of traded commodities, it is most unlikely that ZMX will thrive. It is therefore important that an independent WRS regulator is established to uncompromisingly enforce relevant legislation, regulations and best practices in the storage industry. The regulator can be a public institution, as this is the case of Tanzania, but its board should reflect the interests of those whose interests will be at risk if the licensed operators do not perform creditably. The board representation should therefore be skewed in favour of representatives of farmers, the banking and insurance industries. The operations of ZMX will, however, be under the aegis of the capital markets regulator in Zimbabwe.

##### ***b. Role of GMB***

GMB's role is pivotal because it owns the bulk of storage facilities suitable for the WRS. To align its grain storage and handling operations with the WRS/ZMX, their physical storage infrastructure needs to be well-maintained and their staff trained to offer services in compliance with industry's best practices as well as the licensing and oversight framework implemented by the WRS regulator. For this purpose, GMB needs to review its internal control and monitoring systems which are tight enough to minimise in-store losses. It may also be necessary for GMB to add professional indemnity cover to its existing insurance against fire and allied perils. This will ensure that it is able to settle any claims which arise due to any form of non-performance by its managers.

It is not anticipated that GMB will need to invest substantially in scaling up storage capacity. This is because evidence from countries such as Zambia and Tanzania shows that private sector investment in storage infrastructure increases when the grains market is unfettered. There is however the need for government/donors to invest in constructing ACs in rural communities to facilitate access by smallholders to both the WRS and the exchange.

### ***c. Agricultural trade policy reforms***

Under the SIs mentioned above, GMB remains the primary market actor in the “controlled” commodity markets in Zimbabwe. This situation has the potential to stymie the development of ZMX and the WRS. In particular, where GMB prices are determined administratively, there is little or no incentive for private actors to trade via ZMX guided by market fundamentals. Though wholesale policy/regulatory reforms are not anticipated in the short-term, it is important for GMB to shift from setting prices administratively and allow domestic demand and supply conditions to determine prices through a transparent process involving ZMX as discussed in Section 3.2 (a).

In the current season, where a bumper harvest is forecast but the official producer prices remain high, it is highly recommended that GMB considers the option of its announced price becoming a floor price which is enforceable in 3-4 months. As outlined in Section 3.2 (b), this creates space for private sector involvement in the market and allows GMB to mobilise resources for prompt payment of the grains it procures.

### ***d. Improved market information system (MIS)***

Consistency by Government in relying on the market to manage food security requires that its actions are based on timely and reliable market information. This goes beyond disseminating market price information and includes the following:

- Reliable crop output forecasts, which is published in advance of the harvest; and
- Estimates of available stock levels.

This type of information will enable policymakers to judge the right time to enter the market and target volumes to be bought or sold. The process will become more predictable, thereby easing market uncertainty and doubtless thus encouraging private participation in the grains markets. Provision of technical assistance to strengthen Government capacity in forecasting output will therefore be an important development support.

Monitoring stock levels in a situation where the bulk of grain produced is stored on-farm or at home poses major challenges. The alternative of monitoring stock levels in formal storage is relatively easier and more reliable. It is expected that the WRS will encourage more storage in the formal sector and so enhance stock monitoring.

### ***e. Stakeholder capacity development***

Capacity development is also crucial in enabling financiers to offer competitively-priced inventory finance, which can improve liquidity in the market and at household levels. Also to be targeted in this context are smallholders in accessing remunerative quality-sensitive markets. Furthermore, traders and processors also require capacity building to enable them to fully exploit opportunities created by the exchange and the WRS.

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