

Standing Committee for Economic and Commercial Cooperation of the Organization of Islamic Cooperation (COMCEC)

IMPROVING AGRICULTURAL MARKET PERFORMANCE: COMCECDEVELOPING AGRICULTURAL MARKET INFORMATION SYSTEMS



OVERVIEW STUDY OF MIS IN THE WORLD AND OIC COUNTRIES PRESENTED AT 11TH MEETING OF COMCEC AGRICULTURE WORKING GROUP 22nd February 2018, Crowne Plaza Hotel, Ankara, Turkey

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Structure of Presentation

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Background and objectives of the study

Conceptual framework:

- Definition of agricultural MIS
- Objectives, typology and key drivers of MIS development

Methodology

Key findings:

- Overview of MIS in the world/OIC countries
- Results of online survey of MIS in OIC countries

Background of study

- Study 2nd contribution to 4th Output Area of COMCEC strategy "Improving agricultural market performance: creation and development of market institutions".
- COMCEC (2017): OIC countries in 2015 contributed 21% of global agricultural output; sector employs 23% of global labour force; and share of GDP can be high (e.g. 24% in Pakistan; 20.6% in Nigeria and 7.6% and 8.5% respectively in Turkey and Mali).
- Most OIC members have trade deficits in agriculture, estimated at 63.3 billion US Dollars in 2016. Hence need to:
 - Increase domestic output and productivity, to assure food security, greater social and economic stability.





Background and objectives of study

- Liberalising agricultural marketing systems implies
 Market institutions more important policy levers
- Example is agricultural market information systems (MIS)
 Critical in promoting efficient/transparent agricultural markets



- Main objectives of study:
 - Provide overview/mapping of current MIS in OIC member countries;
 - Recommend policy options to improve agricultural market performance through the use of MIS; and
 - Provide indicators for monitoring MIS.

Methodology



- Literature review
 - Review of available literature (published and grey literature)
- Online survey
 - Using survey monkey to contact 600 MIS experts in OIC Member Countries
- **Case study** in-depth study on three OIC countries, including field visits





Conceptual framework: MIS definition (1)

• Agricultural Market Information Systems (MIS) are systems set up to collect, process/analyse; and disseminate market-related information to actors in agricultural value chains e.g. farmers, traders and processors.



Staatz J, Kizito A, Weber M and Dembélé N.N. (2014) "Challenges in measuring the impact of Market Information Systems", *Cah Agric* 23: 317-24. doi : 10.1684/agr.2013.0631

Conceptual framework: MIS definition (2)

- Information required by actors is for:
 - Trading/marketing decisions e.g.
 - How much of surplus to sell, into which markets and when.
 - Investment decisions e.g. what to produce and how much to produce
 - Monitoring: sector (policy actions); and enterprises (e.g. financing)
- Evidently, not just about prices but also:
 - Price trend analysis
 - Demand monitoring/analysis
 - Output forecast/stock monitoring
 - Quality premiums in market segments
 - Monitoring supply factors e.g.:
 - Weather; incidence of plant/livestock diseases

Conceptual framework: MIS definition (3)

Agricultural Market Information Systems (MIS) differs from:

• **Marketing information:** which provides information on potential market channels, including packaging and quality requirements and available payments systems

Shepherd, A.W. (1997) "Market Information Services: Theory and Practice", AGS Bulletin. FAO Publication: Rome.



AGROFOOD MARKETING SYSTEM

Conceptual framework: MIS definition (4)

CTA (2015) also stress that MIS differs from following:

- Market Information Services: the service of providing market information; and
- **Agricultural statistics:** providing data on agricultural production, trade volumes and prices. Used by policymakers to inform:
 - Sector development programmes; and
 - Management of macroeconomy e.g. monitoring and controlling inflation.

Key drivers of development of MIS

Liberalisation in 1980-90s major driver of MIS development:

- Reduced role of government and cooperatives in inputs/output markets scaled back; and price setting
- More space for private sector.

Positive impact on fiscal burden; private sector role; divdresifying production BUT:

- Produce/inputs quality more variable; trade more volumetric; and marketing chain elongated.
- Producer margins squeezed; access to markets and finance more uncertain; agricultural trade policies less predictable.
- Market institutions needed to improve market performance

Objectives of MIS

The main objectives of MIS include the following:

- Facilitate trade and investment decisions (not only farmers).
- Improve market transparency, engendering trust
- Minimise information asymmetry between counterparties (trade and finance).
- Enhance bargaining power of smallholder farmers
- Provide evidence-basis to guide sector policy decisions, especially with regards to food security.
- Provide reliable data for agricultural research

MIS typologies (1)

Classification can be based on:

- Type of service provider; or
- Technology used e.g. modern ICT
- Provider-based types of MIS:



- Government MIS usually hosted by Ministry of Agriculture but sometimes by Min. of Trade. Different from official statistics.
- Private or commercial MIS set up either as subsidiaries of commodity trading companies or autonomous providers
- Donor/NGO-provider MIS often linked to sector development projects
- **Technology-based classification of MIS:** (used in study)
 - First Generation MIS (1GMIS) mainly government or donor; focus on staples; large number of markets; collection by field staff; paper-based transmission; radio/print media dissemination
 - Second Generation MIS **(2GMIS)** all types of providers; ICT used in collection, transmission, processing and dissemination of information.

MIS typologies (2)

• First Generation MIS (1GMIS)



Typology of First Generation MIS in Developing Countries

Product coverage and information disseminated:

Major staple grains (e.g. maize and rice)

Focus mainly on average prices in many markets (rural and urban) but volumes may be added.

Area covered:

National, including a collection of primary data from all major rural and urban markets.

Institutional home:

Government (especially the Ministry of Agriculture).

Data collection and processing:

Data collected by the field staff of government agency and processing by head office personnel.

Technology used:

Data transmission is paper-based; processing involves data entry by head office staff using basic statistical software e.g. Excel spreadsheets. Dissemination via radio and/or sometimes television broadcasts by government-owned stations; newspaper publications and postings on billboards.

Target users and funding sources:

Target farmers and traders but often used more by public policy agencies; funding is mainly from government and donors (through projects)

Source: Adapted from Galtier et al. (2014); David-Benz et al. (2015); Chitoah and Gyau (2016); Zhang et al, (2016); and Staatz et al, (2014).

MIS typologies (3)

+ Typologies of Second Generation MIS Models (2GMIS)

Type of provider	Product coverage	Type of information	Technology used	Users	Examples
Public (national)	Strategic food and	Rural/urban prices (wholesale	Field interviews to collect price	Mainly policymakers	ZAMIS
	export crops	and retail); forecasts in national	data; dissemination via radio, TV,		
		statistics)	mobile phones, email, websites		
Public monitoring	Strategic food crops	Mainly output forecasts,	Forecasts using satellite	Policymakers and	AMIS, MED-AMI
systems (regional		regional/global supply and	technology; weather monitoring	donor agencies	FEWSNET
and international)		trade flows	and data from national sources		
Private	Crops, livestock,	Prices, availability, weather	ICT used in transmitting price	Market actors (uptake	ESOKO
(independent)	inputs	forecasts, trade flows, database	data (interviews); processing and	low in most cases)	
		of users, e-commerce platforms	dissemination mobile phones	and policymakers	
NGOs/professional	Strategic food and	Prices, availability, weather	ICT used in transmitting price	Market actors (uptake	MAMIS in Tanza
organisations	export crops,	forecasts, trade flows	data (interviews); processing and	low in most cases)	
	livestock		dissemination mobile phones	and policymakers	
MIS for commodity	Traded commodities	Prices per grade, supply and	Dissemination via media reports,	Market actors,	JSE/SAFEX, Burs

EXAMPLE OF 1GMIS: Zambia Agricultural Market Information System (ZAMIS)

- ZAMIS set up in 1993 as part of agricultural sector reforms launched in late 1980s
- Run by Ministry of Agriculture with focus on wholesale/retail prices for maize grain/flour, other cereals, fertiliser and seed.
- Data collected by Provincial Marketing officers
- Collation and processing at head office in Lusaka
- Dissemination: weekly radio broadcasts; twice-weekly market bulletins in newspapers; on notice boards rural markets
- Low uptake by farmers and unsustainable:
 - Broadcasts cancelled due to accumulated debts (despite cosponsorship by local bank)
 - Postal charges delayed transmission of price data

NATIONAL 2GMIS: ETHIOPIA

- Focus: main staples e.g. maize, wheat
- Primary objective: food security
- Prices (figure) and early warning
- Dissemination: email, websites, media
- Multiple government/donor agencies involved:
 - Ethiopia Grain Trade Enterprise (EGTE) government-owned, stocks grains; source of primary price data
 - Ministry of Agriculture oversight of MIS; collects rural price data
 - USAID-funded Famine Early Warning Systems Network (FEWSNET) publishes Monthly Market Watch focusing on major staple grains.
 - Weather reports from Ethiopia National Meteorological Agency
 - Ethiopian Food Security Reserve Agency (EFSRA) authorises withdrawal and distribution of relief food stocks held by ETGE.
 - Actions coordinated by Disaster Risk Management and Food Security Sector (DRMFSS) including WFP, USAID and FAO.



AMIS: An international monitoring system

- Agricultural Market Information System (AMIS); launched in 2011 by G20 Ministers of Agriculture; response to 2007/08 food crisis.
- Membership: G20 and major grain exporting or importing countries.
 - Also FAO, IFPRI, IFAD, OECD, UNCTAD, WFP, WTO, World Bank, UN High Level Task Force (UN-HLTF), Group on Earth Observations Global Agricultural Monitoring (GEOGLAM) and International Grain Council.
- Crop focus: wheat, maize, rice and soybean
- Data from government agencies and forecasts (below) by GEOGLAM



Overview:

In Africa, conditions are mixed over the main season. In West Africa, the main season is complete and while production was generally favourable some poor conditions resulted due to below average rainfall. In East Africa main season harvest is underway and conditions are generally favourable despite fall armyworm impacts. Winter wheat harvests are complete in Southern Africa and production was favourable despite some concern from dry conditions during the season. In Central and South Asia, winter wheat planting has begun under favourable conditions at the start of the season. In Southeast Asia, wet season rice harvest is ongoing and will finish at the end of December with production concerns due to heavy rains and flooding during August and September. In Central America and the Caribbean, segunda season planting is complete and conditions are favourable.

Exchange-linked 2GMIS: JSE/SAFEX

- Commodity exchanges trade by standardising quality/quantity and assuring delivery/payments. MIS an essential building block.
- Report only transparently discovered prices via electronic boards, email, radio and TV broadcasts
- Other information: crop forecasts, reports on stocks monitoring, demand and supply; and analysis (e.g. by brokers)
- JSE/SAFEX most successful exchange in Africa; supported by WRS and robust regulatory framework.

Electronic notice board





crop estimates committee oesskattingskomitee

From/Van: Baldwin Netshifhefhe Tel: 012 319 8043 • Fax/Faks: 012 319 8031/5 • E-mail/E-pos: BaldwinN@daff.gov.za Web page/Webblad: <u>www.daff.gov.za/statistics</u> and economic reports or <u>www.sagis.org.za/CEC</u>: Crop Estimates EMBARG0: 15:30

The area estimate and fourth production forecast for winter cereals for the 2017 is hereby released. / Hiermee word die oppervlakteskatting en vierde produksieskatting vir wintergewasse vir 2017 vrygestel.

WINTER CEREALS – AREA PLANTED ESTIMATE AND FOURTH PRODUCTION FORECAST: 2017 WINTERGEWASSE – OPPERVLAKTE- EN VIERDE PRODUKSIESKATTING: 2017

Area planted/ Opp beplant 2017 Ha	4 th forecast/ 4 ^{d*} skatting 2017 Tons	3 rd forecast/ 3 ^{de} skatting 2017 Tons	Area planted/ Opp beplant 2016 Ha	Final crop/ Finale oes 2016 Tons	Change/ Verandering %		
(A)	(B)	(C)	(D)	(E)	(B) + (C)		
Commercial/Kommersieel:							
491 600	1 581 250	1 655 250	508 365	1 910 000	-4,47		
91 380	281 059	281 059	88 695	355 000	-		
84 000	96 600	100 800	68 075	105 000	-4,17		
666 980	1 958 909	2 037 109	665 135	2 370 000	-3,84		
	Area planted/ Opp beplant 2017 Ha (A) ieel: 491 600 91 380 84 000 666 980	Area planted/ 2017 A th forecast/ 4 th skatting 2017 Ha 2017 (A) (B) ieel: 491 600 1 581 250 91 380 281 059 84 000 96 600 666 980 1 958 909	Area planted/ Opp beplant 2017 4 th forecast/ 2017 3 rd forecast/ 3 ^{ch} skatting 2017 3 rd skatting 2017 Ha (A) (B) (C) ieel: (B) (C) 491 600 1 581 250 1 655 250 91 380 281 059 281 059 84 000 96 600 100 800 666 980 1 958 909 2 037 109	Area planted/ Opp beplant 2017 4 th forecast/ 4 ^{4th} skatting 2017 3 ^{cd} forecast/ 3 ^{db} skatting 2016 Area planted/ Opp beplant 2016 Opp beplant 2016 Ha (A) (B) (C) (D) ieel: (B) (C) (D) 491 600 1 581 250 1 655 250 508 365 91 380 281 059 281 059 88 695 84 000 96 600 100 800 68 075 666 980 1 958 909 2 037 109 665 135	Area planted/ Opp beplant 2017 4 th forecast/ 4 ^{de} skatting 2017 3 rd forecast/ 3 ^{de} skatting 2016 Area planted/ Opp beplant 2016 Final crop/ 2016 Ha (A) (B) (C) (D) (E) Ha (A) (B) (C) (D) (E) Ha (B) (C) (D) (E) Ha (B) (C) (D) (E) Hell (B) (C) (D) (E) Ha (B) (C) (D) (E) Hell (B) (C) (D) (E) Ha (B) (C) (D) (E) Ha (B) (C) (D) (E) Ha (B) (C) (D) (D) (E) Ha (B) (C) (D) (D) (D) (D) Ha (B) (C) 1655 250 508 365 1910 000 91 380 281 059 281 059 88 695 355 000 84 000 96 600		

Mapping of MIS in selected Arab Group members of OIC

MIS/Country	Type of host	Information covered	Dissemination/ users
Système d'Information Des Prix Agricoles au Maroc (ASAAR), Morocco	Ministry of Agriculture and Maritime Fisheries	Wholesale/retail prices: food crops, horticultural produce and livestock products.	Via mobile phones, website; used mainly by policymakers
MIS for Chamber of Commerce, Industry and Agriculture Zahlé and Bekaa, Lebanon	Civil society organisation	Wholesale/retail prices for food and other agricultural commodities	Disseminated via mobile phones: 3 times/week.
Syria MIS	Public, Ministry of Agriculture	Mainly food staples	Access only via website; mainly by policymakers
Mediterranean Agriculture Market Information Network (MED-AMIN)	Regional public	Market monitor for wheat, maize, barley and rice.	Mainly policymakers

MED-AMIN: regional MIS in Arab Group

- Mediterranean Agriculture Market Information Network (MED-AMIN) launched in February 2014
- Includes seven OIC countries; mainly dependent on food imports
- Four strategic crops: wheat, maize, barley and rice.
- Primary data from focal organisations in member countries
- Output forecasts (below); global supply monitoring; national actions
- Main challenge is provision of data by national bodies.



Mapping of MIS in selected Asian/African Group members of OIC

MIS/Country	Type of host	Information covered	Dissemination/users
Federal Agricultural Marketing Authority (FAMA), Malaysia	Public	Price data for domestic staples	Automated telephone service and website.
Bursa Malaysia and the Palm Oil Registration and Licensing Authority (PORLA), Malaysia	Private/public regulator	Export crops (e.g. oil palm products)	Website and electronic boards
Türkiye Odalar ve Borsalar Birliği (TOBB), Turkey	Private	Daily prices, trend analysis for exchange-traded commodities e.g. wheat	Website; used by policymakers and market actors
Afrique Verte with Conféderation Paysanne du Faso (CPF), Burkina Faso	Regional, donor- supported	Local prices for staple foods; stocks and locations; trade platform (offers and bids)	Mobile phones, website; used by farmers/traders linked to WRS and policymakers
Manobi, Senegal	Regional, private	Wholesale/retail prices for crops, livestock, fish products, farm inputs. Also database of users; and e- commerce platform	Website, mobile phone SMS, Information Centres, network of Village Chiefs/teachers linked to farmers

Malaysia: MIS for segmented market (1)

- For produce traded in domestic market; mainly food crops
- Run by Federal Agricultural Marketing Authority (FAMA)
 - Collects primary price data from rural markets/FAMA branches;
 - Analyses/disseminates via automated telephone answering service and website.
 - Guides setoff producer prices, which influence wholesale markets.



Malaysia: MIS for segmented market (2)

- Bursa Malaysia: commodity exchange
- Trading oil palm products (mainly for export)
- Spot/futures prices reported (as below)
- PORLA adds information on output forecasts, stock levels and utilisation of fresh oil palm products e.g. palm oil, palm kernel oil, palm kernel cake and oleochemical products



Going beyond 2GMIS:

- Taking advantage of advances in ICT to provide following:
- Prices via mobile phones (but data collection similar to 1GMIS); cover wide range of crops/livestock; and inputs (fertiliser, seed)
- Also disseminate general information e.g. weather forecasts and reports, output forecasts; and extension advisory services.
- Maintain accessible database of producers inputs and equipment suppliers, transporters, processors, traders and financiers. Used to facilitate transactions, e.g. between farmers and especially traders.
- May provide trading platforms with "bids/offers" (but offer no guarantees, thereby limiting scope).
- Monitor pre-harvest farm operations (beneficial to lenders).
- Examples:
 - ESOKO in West/Central Africa
 - Sikumis in Indonesia
 - Denizbank Mobile Platform in Turkey



Online survey results

- Background:
 - Predominantly from Africa Group
 - Most working with government/donor organisations
 - Very few (6%) from private sector

• Information requirement:

- In addition to prices: quality premiums, price trends, traded volumes; also database on suppliers and buyers.

• Level of satisfaction:

- Rather low; only 36% reported being satisfied;
- Complaints: reliability of data (related to above requirements); timeliness of dissemination; and sustainability challenges.

• Challenges and suggestions:

- Lack of funding and limited revenue-generating capacity; difficulty in collecting accurate (unbiased) data; absence of market institutions e.g. commodity exchanges.
- Regulatory framework with guidelines to standardise data collection/dissemination and ease comparison of data and to improve the interoperability.

