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THE GLOBAL INFORMATION AND EARLY WARNING SYSTEM ON FOOD AND AGRICULTURE (GIEWS)

1. In response to the food crisis of the early 1970s, the Committee on World Food Security prompted the creation of the Global Information and Early Warning System on Food and Agriculture (GIEWS). The FAO Council endorsed GIEWS establishment, mandate and working arrangements at its Sixty-fifth Session held in Rome in March 1975. GIEWS is located in the Trade and Markets Division (EST).
2. GIEWS has since established itself as the world's leading source of information on food supply and demand at global, regional and country levels. It provides the international community, governments, policy-makers and policy-analysts with the most up-to-date, accurate and objective data and information and issues alerts and warnings on imminent food crises.
3. To meet its mandate, GIEWS collects, analyses and disseminates data and forecasts that affect the current food security situation and the short-term outlook. On a daily basis, GIEWS monitors food production, consumption, trade (imports and exports) and stocks in all countries of the world, with particular attention to Low-Income Food-Deficit Countries (LIFDCs). The main variables monitored by GIEWS include weather conditions, input accessibility, pest and disease outbreaks, policy changes, trade flows, international and domestic food prices, stocks, humanitarian situation and interventions, conflicts and general macro-economic conditions.
4. The information collected and analysed by GIEWS originates from different sources. Through the FAO Representations in countries, GIEWS accesses information provided at country level by specialized governmental institutions, universities and research institutes, private sector organizations and non-governmental organizations (NGOs). GIEWS also relies on information provided by a wide variety of international organizations and regional institutions and agencies. In addition, information originates from FAO technical divisions that flag emerging issues affecting food supply and demand conditions. In particular, GIEWS works closely with the FAO Food Chain Crisis (FCC) Management Framework and the Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES).
5. To support monitoring activities of major crops across the globe and supplement ground-based information to assess production prospects, GIEWS utilizes remote sensing data that provides valuable

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insights on vegetation conditions during the cropping season. GIEWS and FAO's Climate and Environment Division (CBC) have jointly developed the Agricultural Stress Index (ASI), a quick-look indicator for early identification of agricultural areas with a high likelihood of water stress and, in extreme cases, drought at the global and country level.

6. By monitoring vegetation conditions across global cropped areas during the growing seasons, ASI detects "hotspots" where crops are likely to be affected by drought. From the start to the end of the crop season, ASI is updated every ten days with new satellite images at 1 km resolution and is freely available online together with other weather-related indicators, including rainfall estimates, the Normalized Difference Vegetation Index (NDVI), the Vegetation Health Index and the Vegetation Condition Index.

7. To monitor agricultural drought more accurately, GIEWS has recently developed an ASI country-specific version, which has already been adopted by several countries. Currently, GIEWS is working on a new version of ASI that will strengthen the accuracy of crop monitoring and allow for the assessment of water stress on pastures.

8. In the context of monitoring the food access dimension of food security, GIEWS tracks consumer prices of basic food commodities in many countries around the world, particularly in developing countries and LIFDCs.

9. Following the 2007–08 global food price crisis and subsequent period of highly volatile prices, GIEWS intensified its food price monitoring and analysis activities, leading to the development of the online Food Price Monitoring and Analysis (FPMA) Tool. The FPMA Tool is an advanced technical platform for the analysis and dissemination of price information, and it includes about 1 500 monthly domestic retail and/or wholesale price series of major foods consumed in about 90 countries and weekly/monthly prices for 88 internationally traded foods. Besides supporting GIEWS and other FAO units' analysis, the FPMA Tool and database have become valuable to the public, providing the international community and decision-makers with up-to-date and reliable price data. Several international organizations and national institutions, including the International Food Policy Research Institute (IFPRI), the World Food Programme (WFP), the World Bank and the United States Department of Agriculture (USDA), regularly request bulk downloads of price data from the FPMA database.

10. Building on the success and experience gained at the global level, the FPMA Tool has been adapted for use at country level, and GIEWS supports countries to strengthen their capacities in price collection and analysis through the adoption of this technology and related price analysis and reporting activities. National versions of the FPMA Tool are operational in Guatemala, Kyrgyzstan and Tajikistan, while work is ongoing to conclude deployments in several other countries in Europe, Africa and Asia. In Central America region, as well as country-level installations, GIEWS is supporting the establishment of a regional version of the Tool.

11. In 2015, GIEWS developed an indicator of price anomalies (IPA) that identifies abnormal changes in prices both within and across years. Based on this indicator, which is monitored at country level, GIEWS periodically issues early warnings on high food prices that may negatively affect food security. The GIEWS IPA has been adopted as the indicator for measuring and monitoring progress towards Sustainable Development Goal (SDG) Target 2.c (Zero Hunger, proper functioning of food commodity markets and limiting of extreme food price volatility).

12. Another important GIEWS activity involves Crop and Food Security Assessment Missions (CFSAMs), carried out jointly by FAO and WFP at the request of national authorities. The aim of CFSAMs is to provide an accurate assessment and analysis of the extent and severity of crisis-induced food insecurity, whether existing or expected, in a certain country or specific area. CFSAMs have traditionally been fielded in countries experiencing natural disasters, which affect crop production, such as droughts or floods. However, in recent years, the number of requests from countries where

crop production and food security are affected by man-made disasters, mostly related to wars and conflicts (e.g. South Sudan, Syria, Myanmar, Central African Republic), has increased notably. At the macro level, CFSAMs analyse the overall economic situation, agricultural production and market conditions and draft a national staple food balance sheet, including an estimate of any uncovered food requirement for the coming marketing year. At the micro level, CFSAMs provide an analysis of households' access to food and estimate the assistance that is required by different population groups, during specific periods, in order for them to have access to adequate food. The recommendations provided by CFSAM reports give insights and propose actions to governments and the international community in order to minimize the impact of crises on the affected populations.

13. In terms of outputs, GIEWS produces several periodic publications, reporting and alerting on different aspects of food security at global, regional and country level. All GIEWS publications are available online. GIEWS' main publication is the quarterly "Crop Prospects and Food Situation" report that provides a forward-looking analysis of the food situation by geographic region, focusing on the cereal production outlook, market situation and food security conditions, with particular attention to LIFDCs. The report includes a detailed list of countries requiring external assistance for food and highlights the main factors behind the food insecurity situation.

14. Furthermore, every month, GIEWS publishes the FPMA Bulletin, reporting on recent food price developments at world, regional and country level and providing warnings on price anomalies. Periodically, GIEWS also produces short reports on anomalous (GIEWS Updates) or alarming (GIEWS Alerts) food security situations at country or regional level.

15. GIEWS also produces Country Briefs, providing up-to-date information on the food security situation at country level. The Briefs include information on the current production prospects for the main crops, an assessment of the livestock situation, forecasts of cereal import requirements, an analysis of food price and policy developments and an overview of the food security situation. The Briefs are used as building blocks for several high-level reports, including the annual "Global Report on Food Crises" by the Food Security Information Network (FSIN) and the bi-annual update for the United Nations Security Council on "Monitoring food security in countries with conflict situations".

16. In close cooperation with the Agricultural Market Information System (AMIS) Secretariat and various teams of the Trade and Markets Division, GIEWS has developed and maintained commodity balance sheets (CBSs) for all major food commodities. The CBSs provide essential information for monitoring and analysing the food security situation at country level and are particularly useful to monitor food supplies and food security around the world. For instance, the per capita availability of major food commodities is regularly utilised to validate, update and forecast the total calorie availability (technically the dietary energy consumption, or DEC), which is a key input in the estimation of the prevalence of undernourishment (PoU). The PoU is one of FAO's key food insecurity indicators, with annual updates published in FAO's flagship report "The State of Food Security and Nutrition in the World" (SOFI). The PoU has also been selected as one of the indicators to monitor SDG Target 2.1. In addition to the food supply estimates, yield and production data and estimates of the CBSs are also used in various knowledge products and publications. Most recently, they were utilized as a central variable in the analysis of climate variability and its impact on food security, with the results to be presented in the 2018 edition of the SOFI report.

17. GIEWS collaborates with several FAO units, international and regional institutions and working groups dealing with crop monitoring, food security analysis and early warning. GIEWS systematically provides inputs to the FAO Early Warning Early Action team that aims to translate forecasts and early warnings into anticipatory actions. GIEWS collaborates with the FAO's Food Chain Crisis-Intelligence and Coordination Unit (FCC-ICU) by providing information for inclusion in the quarterly FCC Early Warning Bulletin. GIEWS' crop production figures and analyses for wheat and coarse grains are incorporated into FAO's bi-annual Food Outlook report. The Integrated Food Security Phase Classification (IPC) Global Platform uses crop production estimates and food market analyses produced by GIEWS when food security assessments are carried out at country level. The

ASI has been adopted as a key indicator for natural hazards in the Index for Risk Management (INFORM) as well as in the FAO's Fall Army Worm Risk Index (FAWRisk). Moreover, on a monthly basis, GIEWS provides data and information to the AMIS and the Global Agricultural Geo-monitoring Initiative (GEOGLAM). AMIS and GEOGLAM initiatives both formed part of the G20 Action Plan on Food Price Volatility and Agriculture, adopted by the G20 Agriculture Ministers in June 2011 in Paris under the G20 French Presidency.