



SAHEL AND WEST AFRICA CLUB

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WEST AFRICAN FUTURES: SETTLEMENT, MARKET AND FOOD SECURITY

Conceptual Note

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I. INTRODUCTION

In December 2010 SWAC members have approved food security as the central theme for the 2011-2012 work plan on West African Futures.

As highlighted in the working document submitted to SWAC members “*food uncertainties are at the top of the agendas of West African regional organisations, the G8/G20, the OECD and the international community in general*”. Several international initiatives on food security have been launched and national and regional policies and strategies being formulated. Certain key actors of these strategies are SWAC members. The ECOWAS and UEMOA commissions, with the support of the CILSS, are the drivers of regional policies in West Africa.

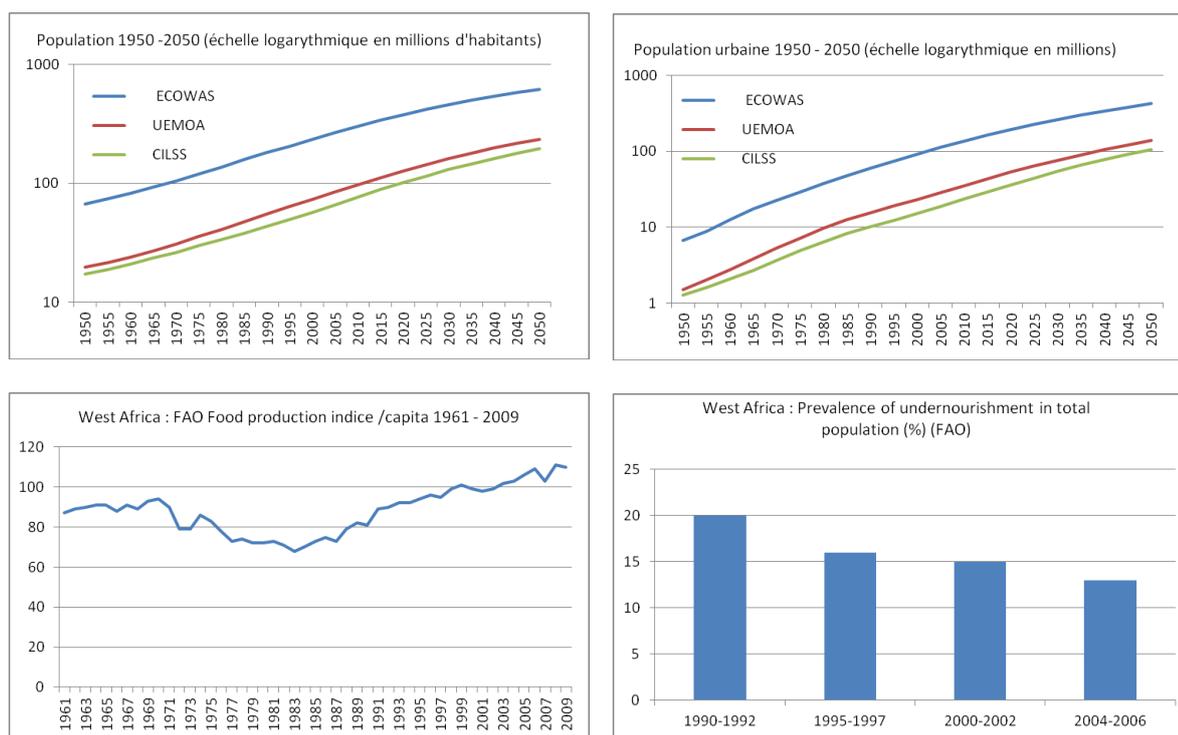
The work of the Club will concentrate on the role of population settlement and market dynamics in food security prospects. The analysis of these two determinants allows to provide novel and useful information to inform design and implementation of food security policies for the following reasons:

- **Population settlement:** The 2004 reference document of the Regional Agricultural Policy for West Africa (ECOWAP) is based on an evaluation of the West African population of 235 million (2000 figures). In 2011, ECOWAS’ population is around 310 million, an increase of 30% compared to 2000. This population growth has not taken place homogeneously. Large urban coastal areas and large Sahelian cities have seen their population increase by 50%-100%. Rural population growth has been higher in coastal and Sudano-sahelian regions than in the Sahel. Many smaller cities in the Savannah belt have seen their population double and triple. This very rapid settlement recomposition process impacts considerably on the West African economic geography, including agricultural geography, market dynamics, income distribution, social and nutritional habits and food security aspects. These evolutions have been well described over the past, but remain insufficiently taken into account in food policy and strategy formulation.
- **Regional Market:** Concerning the regional market, it has often been stressed that policy-makers do not dispose of timely and relevant information for designing agricultural development strategies and/or food crises management and early warning mechanisms. Intra-regional flows are deemed to be low, accounting for 10 to 12% of total exports. However, a considerable share of intra-regional flows are informal and therefore not accounted for in national statistics, nor object of targeted policies. The transmission mechanisms between world market and regional market are not yet well documented. In summary, little information, large uncertainty and consequently no policy levers. Combining the analysis of settlement dynamics with markets appears justified on the ground that both are closely/inextricably linked. Continued spatial dynamics (migration towards urban centres and towards rural areas nearest to consumption centres and most productive) and social (increase in share of non-agricultural population, evolution of consumption habits, etc.) will further increase market development.

Although the work will include some projections, notably as concerns settlement, the main focus is not to produce a detailed description of West Africa in 2050, but rather to provide policy options on how the powerful dynamics mentioned above could better be taken into account in designing and implementing food security and agricultural policies.

II. ANALYTICAL FRAMEWORK

All West African agricultural and food security policies stress the demographic challenges faced. Between 1950 and 2010 West Africa's population increased fivefold and will double again between 2011 and 2050. Urban growth rates are still more spectacular: twentyfold increase between 1950 and 2010 and an expected fourfold increase in urban population between 2011 and 2050. Although these figures should be viewed with some precaution, they clearly highlight the importance of past and future challenges (see graphs below).



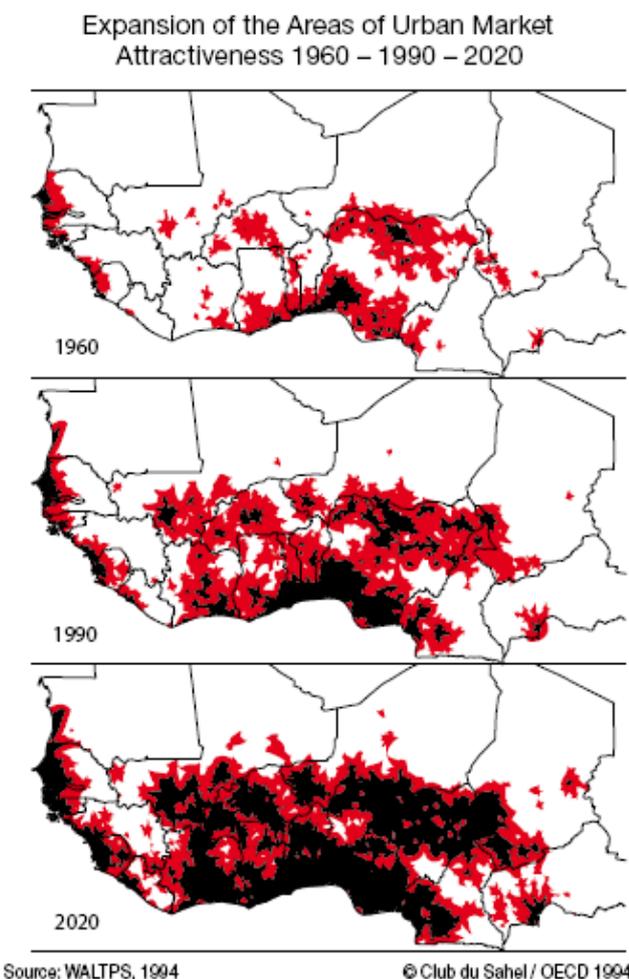
The approach via settlement and markets allows analysing the spatial, economic and social consequences of demographic growth. It refers to a development vision centred around human geography. The 2009 World Development Report "Reshaping Economic Geography" of the World Bank stresses that settlement recomposition (internal mobility within the regional or national space, urban growth) is an integral part of development. Development processes lead to economic concentration which is necessary for economic growth but also bearer of risks and inequalities, notably strong spatial and social disparities. The aim should therefore be to benefit from economic concentration, manifest in high intensity of production and trade, by assuring – through appropriate policies - that individual well being is not only a function of location.

The West African Long-term Perspective Study (WALTPS) carried-out at the beginning of the 1990's by the SWAC follows a similar approach. WALTPS shows that one of the most important vectors of change in West Africa has been rapid population growth and its correlated urbanisation and settlement re-

composition processes¹. Some of the more obvious consequences have been the densification of southern areas of Sahelian countries and northern areas of coastal countries, high urbanisation rates and the development of a network of secondary urban centres, the development of road networks connecting urban and rural areas and increasing market dynamics.

The study finds a strong correlation between rural population density, farm productivity and proximity to markets. Towns and cities are exerting an increasing influence on agricultural production in the surrounding rural areas. These increased economic opportunities are being seized by the rural population to overcome growing physical constraints, and to shift from extensive to more intensive farming (see map). Following WALTPS, this process will be a very multi-faceted evolution: in areas already well connected to urban markets, a new class of entrepreneurial farmers is emerging, farming more intensively, with more sustainable methods and investing their own savings in increasingly market oriented ventures. These new entrepreneurs will be in the minority: 15% of farmers will produce over half of the region's basic food supply.

WALTPS also describes the urban economy which absorbs a large share of demographic growth. The urban economy is and will remain for some time



dominantly informal. The principal function of this popular economy is to integrate “newcomers” (on a basis of sharing work rather than accumulating capital). The informal economy only slowly generates an entrepreneurial class whose activity exceeds mere survival.

In summary, the concentration of people, economic and market activity is a driver of economic growth. However, the vibrancy of this process is heightened by the implementation of policies that accompany spatial and social mobility. These policies should encourage inherent transformations as well as lessen its negative impacts.

¹ Settlement has been defined by the West African Long Term Perspectives Study (WALTPS) as the growth and redistribution of population within each country and across the region.

The major region-wide transformations that result from population growth, settlement, urbanisation, new economic trends, relations between town and country will also shape market interactions for agricultural products. Availability and prices of staple foods are nowadays significantly determined by market outcomes. Analyses of markets and market functioning are an integral part of food security policies. Recent food crises in West Africa have in particular highlighted the link between food security, cross-border trade of food products and the regional market.² However, insufficient information is available on the regional food staple market that is becoming more integrated and increasingly important in understanding food security dynamics.

III. ANALYTICAL COMPONENTS

Five analytical components of the programme are proposed:

1. Historical review and context of global and West African food insecurity
2. Settlement
3. Regional Market
4. Relationship between settlement, market and food security: current status and projections
5. Translation of results into policy options

The working method is centred on a progressive construction of a common vision of the assessment, of projections and policy options. The process will be accompanied by thematic syntheses and technical workshops and expertise.

3.1. Historical review and context of global and West African food insecurity

Comparative analysis of the evolution of food insecurity in the World and in West Africa provides a first insight into which factors have contributed to an improvement in food security. In particular, this component aims to answer: How does West Africa compare to other regions in terms of food insecurity? At what stage of development have other regions seen their food security situation improve and what are the drivers of this improvement? What is the evolution of food security in West Africa? The answers to these questions will contribute to identify possible correlations of food security with economic growth, rapid urbanisation (driven by industrialisation or not), evolution in the ratio of consumers to agricultural producers, etc.

3.1.1 Comparative analysis of the evolution of global and West African food security

The evolution of the share of people in food insecurity has been varied, depending on period and region considered. These different evolutions have their origin in a variety of factors, such as economic growth, level and rate of urbanisation, ratio producers/non-producers, policy design, etc. Comparison of food security evolutions could notably be based on indicators of undernourishment. The analysis will aim to identify key factors driving improvements in food security in regions (or countries) having made considerable progress.

² See for example “Food security and cross-border trade in the Kano-Katsina-Maradi corridor”; (2006) Joint Mission Report, WABI/Sahel and West Africa Club.

Analyses:

- Review of food security evolutions in the World and West Africa.
-

3.1.2 Mapping trends of West African food insecurity

Regional and local differences in food insecurity exist. An analysis and mapping of spatial differences in food insecurity will be carried out. The analysis will be based on a typology jointly defined with a group of experts. This could include: populations living at the periphery of settlement and growth poles, in ecological fragile areas, livelihoods dominated by traditional activities (e.g. pastoral and agro-pastoral communities of the Sahelo-saharan band); absence and/or little alternative monetary income sources; strong exposure to climatic variability and shocks; chronic food insecurity and recurrent food crises; poor rural households in cash-crop production basins, etc.

Analyses:

- Food insecurity mapping
-

3.1.3 Analysis of recent food crises

Food crises are the result of a combination of structural and cyclical factors. Often they occur in a context combining endemic poverty in ecologically fragile areas, climate risks, socio-political evolutions and increasing connectedness to markets. The analysis will aim to identify driving factors of recent food crises. In West Africa recent food crises, 2005, 2007 2010, have been characterised by a hike in prices (national, regional and international), deterioration of livestock/cereal terms of trade, and high chronic prevalence of undernourishment, etc. Urban food insecurity is also becoming increasingly important.

Analyses:

- Review and analysis of recent food crises.
-

3.2 Settlement

The underlying hypothesis expressed in the analytical framework is that a correlation exists between the rapid and powerful settlement dynamics in West Africa and the region's food insecurity characteristics and hence the need for developing adequate food security policies and strategies. The following analyses will be carried out to test and define in more detail the hypothesis.

3.2.1 Analysis of West African settlement trends

Available data allows constructing a relatively precise description of settlement re-composition dynamics over the past decades: urbanisation and development of an urban network, internal and intra-regional migration dynamics, re-composition and densification of rural settlements, process of demographic concentration/polarisation, etc.

The analysis aims to describe main settlement trends that have occurred over the past decades. It will distinguish between underlying cyclical and structural factors and try to evaluate their respective role and possible impact on food security.

Analyses:

- Review of past settlement dynamics.
- Identification of relationship between settlement dynamics and structural factors (e.g. economic growth, industrialisation, demographic transition).
- Identification of relationship with cyclical factors that can accelerate or slow down the urbanisation process (e.g. policies, economic cycles) and external shocks like famines and conflict.
- Analysis of impact of rural-out migration on rural food security and agricultural investment.

3.2.2 Urbanisation, rural settlement patterns and population density

Rural settlement patterns and densities follow closely urban market developments. Closeness to urban markets increases surplus production incentives through market size and reductions in transaction costs (transport costs, infrastructure, information). In these areas agricultural production tends to be more capital intensive and more productive (yields). These two aspects also explain a higher carrying capacity of land in these areas. An analysis of the relationship between the various factors would allow to better understand the link between urbanisation, urban markets, rural settlements and agricultural production. The results could provide useful information for policy-makers in terms of potentials, bottlenecks and possible long-term trends as related to settlement processes.

Analyses:

- Description and estimation of relationships between, urban markets, rural settlements and agricultural production and productivity.
- Estimation of market attractiveness indicators and influence.

3.2.3 Urbanisation, consumption habits and food imports

It has been shown that consumption habits change with urbanisation. Consumption of energy rich products increases (meat, milk products, and others, often imported). How has urbanisation in the past influenced agricultural production? What are the products that will be in high demand in the future and what is the regional production potential for these products? Past studies have shown that regional production in West Africa meets demand with a time lag of three years. This time lag is explained by a need to adjust production to changes in demand habits, the fast rate of urbanisation and external competition. Can the regional market satisfy demand, or are increasing food imports necessary to meet urban demand?

Analyses:

- Analysis of food demand changes over the past decades and its influence on regional production.
- Analysis of supply elasticities and production potential.
- Analysis of evolution of food imports (extra-regional).

3.2.4 Urbanisation and market integration

Higher urbanisation increases the potential for regional market development through two major channels: first, size and composition of demand and second, degree of monetisation of food consumption. Satisfying high, highly diversified and high value added demand (fruits, meat, cereals) increases market opportunities for products from various production basins. Urbanisation also acts as a demand concentration reducing thereby transaction costs. Urbanisation also increases the degree of monetisation of agricultural production. Estimations show in many countries a high share of auto-consumed production. Urban centres provide stable seasonal demand for food products facilitating production increases and wealth creation.

Analyses:

- Analysis of past urbanisation and market integration dynamics.
 - Analysis of demand structure in urban centres.
 - Spatial analysis of market interactions between urban areas and agricultural production basins (agricultural intensification, surplus production).
-

3.3. Regional market

This component aims to describe in more detail the functioning of the regional market and identify variables that have a direct and/or indirect effect on food security.

3.3.1 Size of the regional market

A significant share of regional food staple flows is unrecorded and not accounted for in official statistics. This is related to weak recording and collection capacities at borders, small transaction size (notably border crossings), deliberate strategies to avoid recording (to avoid duties e.g. on re-imported products etc.). It is however widely accepted that actual transactions are significantly larger than official statistics indicate. Previous work carried-out by the SWAC Secretariat has shown that unrecorded flows can locally exceed official flows significantly.³ Disposing of estimations on actual regional flows (market size) is crucial for food security policy formulation, management and early warning. Further, these estimates will also be important for the analyses on functioning, potential and impact of regional food staple market on food security.

Analyses:

- Estimations based on official statistics on production, consumption, exports and imports.
 - Case studies on selected markets (based on size and location) and regional modelisation based on case studies results.
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³ “Food security and cross-border trade in the Kano-Katsina-Maradi corridor: joint mission report”; (2006) WABI/DT/30/06.

3.3.2 Infrastructures and transaction cost:

One of the most often cited obstacles to deeper integration of the regional market are high transaction costs. Costs relate for the most part to transport, border crossings (customs, currency exchange, information). High transaction costs reduce flows and increase consumption prices, while at the same time reducing producer prices. Besides transport infrastructure, communication infrastructure plays an important role in bringing transaction costs down. Over the past ten years progress in mobile communication already contributed to quickly and efficiently disseminate market information. Other infrastructures that will be looked at are: storage and banking facilities, trade facilitation agencies, transformation industries (notably abattoirs).

Free movement of goods, without being a direct parameter of market functioning, is a key element for regional market integration. Several mechanisms and laws in support of free movement of agricultural goods exist in West Africa. However, these regulations are not always respected during food crises and hinder the well functioning markets. The analysis will also look at these aspects.

Analyses:

- ▶ Analysis of transaction costs and impact on regional trade.
 - ▶ Mapping of transaction infrastructure (banking, transport, warehousing, transformation industries).
-

3.3.3 Price variability

West Africa experiences significant inter-annual and inter-seasonal price variability of food staple products. Price variability is a function of production, distance, world prices and trading strategies. The former three are expected to have a stronger influence on inter-annual variability, whereas trading strategies on seasonal variability.

In West Africa the majority of cereal/food crop production is rainfed. Therefore, climatic conditions, which in the Sahel are characterised by strong inter-annual variability, have a significant impact on production volumes. Given the differences in local, national and regional climatic conditions, national and local production variability should be higher than regional. Price variability (and level) is assumed to impact food security via two main channels: access to food products and availability of food products. Whereas high prices worsen food access for net-food consumers, low prices affect net-food producers. In terms of food availability, price variability increases uncertainty for producers reducing investment in food production.

The analysis will look at the role various factors play in influencing price variability such as production variability, world market prices, trading strategies and seasonal variability, distance to main consumption markets, etc. It will then aim to analyse how a well integrated regional market reduces variability. It is assumed that regional market reduces price variability through reduced production variability at regional level, bounding upper and lower price levels though import and export price parity, reducing seasonal demand⁴ variations through better integration of rural and urban markets. Other factors that will be analysed include availability of storage and warranting mechanisms that could also smooth seasonal variations.

⁴ This is notably the case in regions with better developed transformation industries (Nigeria, Ghana).

Analyses:

- Statistical and spatial analysis of price variability and covariability of main food staple products.
 - Analysis of factors influencing price variability, e.g. impact of production variability on price variability, seasonal variability.
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3.3.4 *Surplus and deficit areas, trade profile:*

Agricultural production tends to concentrate. In West Africa as elsewhere concentration takes place in terms of spatial concentration (i.e. production basins) and product concentration. This concentration has followed patterns based on factor endowments (environmental conditions), human settlement, trade complementarities (e.g. cow-pea and onions in Niger), and agricultural policies (cereals in cotton production basins due to availability of fertiliser subsidies), etc. The analysis will include an evaluation of overall regional production balance. This will involve aggregate food consumption needs and production by product type and category. The analysis will also be carried out on a sub-regional basis.⁵

It is assumed that an efficiently functioning regional market could assure balance between deficit and surplus areas. Further, complementarity in product type and category provides benefits from trade and a larger market creates incentives for increasing production. Combined, these processes can improve food security across the region.

Analyses:

- Spatial analysis of regional agricultural production, including an analysis for product classes (cereals, tubers, vegetables).
 - Definition of country production, trade and production potential profiles.
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3.3.5 *Intra-regional trade vs. international imports*

In economic theory intra-regional trade is a second best compared to international trade. The aim of intra-regional trade promotion is that supply form within the region could replace rest of the world imports. This is only justified if comparative costs of intra-regional trade would be lower. Agricultural production potential in West Africa indicates that a significant share of food needs can be satisfied by regional production.

Analyses:

- Analysis of production complementarity.
 - Analysis of import substitution potential (based on work of UNCTAD/WTO).
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⁵ Definition of Sub-regions will be based on the spatial analysis of production and main trading-hubs.

3.4. Relationship between settlement, market and food security: current status and projections

The preceding analyses on variables influencing the relations between settlement, market and food security (see 3.1 to 3.3.5) will be subject of cross-analyses that:

- Allow to define in detail the ensemble of dynamics characterising the West African context.
- Qualify the type of relations between the three components.
- Enable the identification of possible policy based on settlement and market projections (see 3.5).

Based on projections of settlement evolutions, identification of regional market dynamics and their link with food security strategy and policy options will be proposed and discussed to confirm pertinence of their integration in food security analyses and to promote regional policy synergies in terms of food security.

3.4.1 Cross-analysis

Settlement, market and food security have direct or indirect links, reciprocal or one dimensional. These can manifest through a variety of variables analysed during the preceding phase of the programme. Settlement dynamics in terms of population growth, mobility and change in the ratio of agricultural producer to urban consumer impact on the food security environment. Hence, they should be integrated in targeted and coordinated policies based on better understanding of trends and mechanisms to lessen possible negative impacts. Mobility is a traditional and one of the most efficient strategies for accessing new economic opportunities. It is also an adaptation strategy in terms of food insecurity, chronic or transitory. Market dynamics and its impact on food security are at the same time a particularly efficient policy lever for food security strategies.

Analyses:

- Thematic studies analysing the relationship and transmission mechanisms between settlement-market-food security.
 - Based on the thematic analyses, synthesis on key dynamics impacting food security.
 - Statistical and spatial analyses, maps.
-

3.4.2 Settlement and related market dynamics: projections, trends and impact on food security

The aim is to identify main long-term trends of the region and propose settlement projections up to 2050. What to prepare for in terms of Sahelian versus coastal population growth? In terms of urbanisation? Will trends observed over the last decades continue? The various projections of West African settlement characteristics and the analyses related market evolutions will also inform policy and strategy formulation.

Analyses:

- Settlement re-composition projections. This work will be based on existing projections and the hypothesis, based in particular on WDR 2009 and WALTPS, developed above. Projections will be adjusted with revised cyclical parameters.
 - Analysis of past evolutions and their impact on food security (description of adaptation dynamics, comparative analysis of food insecurity trends – standard indicators and settlement based, etc.).
 - Analysis of impact of long-term settlement trends on market and food security dynamics.
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3.5 Translation of results into policy options

Settlement and market dynamics will play an important role in determining demand, production and market characteristics. The results from the analyses and the settlement projections will be interpreted in terms of policy options for regional institutions and countries. What are the implications of identified dynamics in terms of food security policies (other than agricultural policies are involved)?

The work will highlight the regional dimension and the value added for a coordinated response from UEMOA and CEDEAO member states as regards food security. *“The policy strives to outline how diverse types of value-added collective action at the regional level could complement national and sub-national interventions and serve as a catalyst for coordinated actions to meet consensual food security goals”.* *“The achievement of certain food security goals depends on regional inputs or the catalytic impetus that concerted regional action can deliver to address longstanding regional problems (e.g. reducing dependency on imported food, improvement and rationalisation of regional port and transport infrastructure, customs procedures, harmonisation of databases and vulnerability analysis and mapping etc.).”* (Regional food and nutrition security strategy 2010, CARICOM)

Based on deeper understanding of interactions between long-term settlement trends, markets and food security policy options will be discussed. Ultimately, this work could lead to stakeholders up-grading monitoring and information mechanisms, strengthening regional synergies as implied by the regional character of settlement and market dynamics, define food security policies that integrate these evolutions and coordinate the various policy fields at national as well as at regional level.

This phase of the programme will essentially be dialogue-based so as to ensure that outputs reflect needs, respond to a lack of information and/or expertise, to contribute to improving food security.

Analyses:

- Analysis the links between national food security policies and related dimensions (investment, trade, land/territorial planning, etc.)
 - Review of current food security policies and strategies and their integration of settlement and market data, development of analytical matrices and proposals for future
 - Organisation of a forum during the last trimester of 2012 to discuss results of analyses and agree a consensus on food security policies and actions at regional and country level.
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