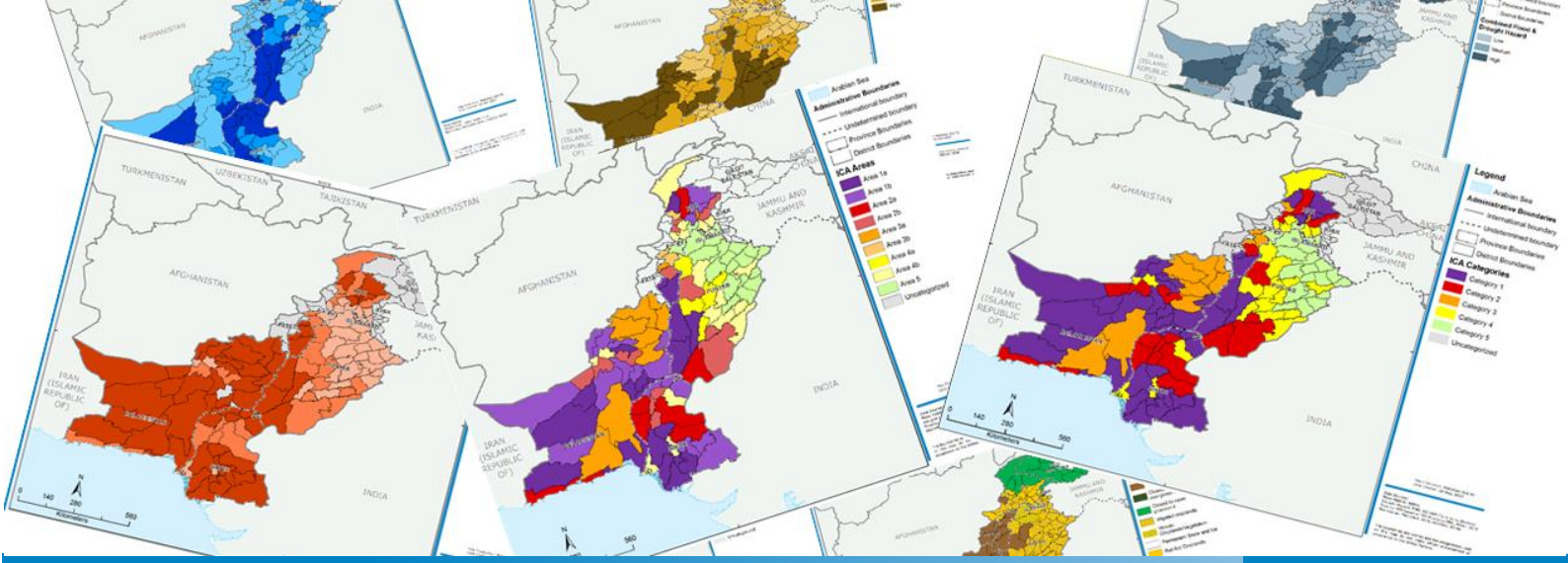

Integrated Context Analysis (ICA) Guidance Manual

WFP

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1. WHAT IS THE ICA?

The ICA is a data-supported process to design better programmes

The ICA is a process of consultations supported by mapped-out data that produces a strategic plan describing where different combinations of programme themes are appropriate to achieve goals of reducing food insecurity and climate related shock risk.

The ICA combines multi-year food security trends with natural shock risk data to highlight sub-national areas where different programme strategies make sense. Food security trend maps shows areas where safety nets can address regular food insecurity, and others where shocks make recovery more important. Climate-related natural shock risk maps show where DRR, preparedness and early warning efforts can complement food-security objectives. Atop this core foundation, mapped data on subjects including nutrition, gender, livelihoods and resilience can enrich theme-level strategic planning in which all pieces work together. The full group of ICA partners discuss these analytical results to arrive at strategic programmatic directions. A more detailed description of the ICA is available at the footnoted link.[1]

The ICA's key tangible outputs are an ICA Programme Recommendations paper that a describes a broad strategy agreed to by partners including the government, and arrived at through a consultative process, and a supporting an ICA Technical Paper containing maps and data as above.

The ICA is the first step of the 3PA

The ICA is the first step in the Three Pronged Approach (3PA), an innovative programming approach developed by WFP in consultation with governments and partners. The aim is to strengthen the design, planning and implementation of programmes in resilience building, productive safety nets, disaster-risk reduction, and preparedness. The 3PA comprises three processes at three levels:

1. **Integrated Context Analysis (ICA)** at the national level. A collaborative tool used to identify the most appropriate programmatic strategies in specific geographical areas, based on areas of convergence of historical trends of food security and natural shock risk.
2. **Seasonal Livelihood Programming (SLP)** at the sub-national level. A consultative process that brings together communities, government, and partners to design multi-year, multi-sectorial operational plans using seasonal and gender lenses.
3. **Community-Based Participatory Planning (CBPP)** at the local level. A "from the bottom up" tool that ensures communities have a strong voice and lead in setting priorities. It supports multi-sectorial plans tailored to local priorities, ensuring community ownership.

The ICA is a partnership between VAM, Programme and Emergency Preparedness

WFP's VAM, Programme and Emergency Preparedness divisions have jointly developed the ICA methodology and associated products. These three divisions continue to collaborate as equal partners in supporting the ICA at Country Office level. Each is critical to ICA success; see the Who has what Role in the ICA section for details.

2. WHY DO THE ICA?

An ICA supports strategic and evidence-based programmatic discussions and analyses by multiple stakeholders at country and regional levels and is designed to assist decision-makers (e.g., WFP, Donors, Government and other partners), as well as programme staff and analysts.

Through its use of **historical trend analysis** the ICA moves away from snapshot contextual analysis and helps identify **areas for medium to longer-term programme planning**, helps put short-term programmes in context while contributing to longer-term programme goals and strengthens programme planning for resilience building through food assistance. In addition, the ICA process:

- Provides a framework within which existing and relevant food security statements and indicators can be used;

[1] ICA Brochure http://documents.wfp.org/stellent/groups/public/documents/communications/wfp264472.pdf

- Underlines the value of using consecutive data;
- Highlights data gaps and supports discussions to address data needs;
- Identifies areas where more in-depth food-security/nutrition studies should be carried out;
- Informs on additional areas for in-depth GIS data collection and coverage;
- Flags linkages and areas for additional in-depth and targeted analysis by partners in general, and WFP programme staff specifically to inform SLP and CBPP work and support the implementation of appropriate programme activities;
- Strengthens country and regional-level capacity to carry out additional thematic GIS vulnerability and preparedness analysis by providing clean and organised GIS datasets;
- Informs and strengthens early warning, preparedness and logistics activities by helping prioritise and focus limited resources (e.g., inform ground logistic teams on best prepositioning of food or other stocks, in view of future hazards etc.).

3. WHO HAS WHAT ROLE IN THE ICA?

Multilateral Coordination Structures

In best practice, a pair of ad hoc bodies chaired or co-chaired by government representatives will administer the ICA process. A Technical Committee with broad participation from all partners will propose country-specific methodological solutions as needed, define data sources, gather/contribute data, conduct ICA analysis, and draft the ICA Technical Report and ICA Programme Recommendations. An Oversight Committee will approve decisions and products of the Technical Committee, and promote acceptance/use of the ICA by all partners. The committees should balance being manageable in size with inclusive participation. This structure will support goals of government buy-in and ownership of the ICA process, and in turn enhance sustainability and usage.

Key partners in the ICA process include the following entities, as appropriate in the national context:

1. Government ministries
2. UN Agencies
3. National Red Cross Society/IFRC
4. Major INGOs/NGOs
5. Universities

Roles and Responsibilities within WFP

Division of Labour between CO, RB and HQ

COs have primary ownership over and responsibility for the ICA process in their country; the ICA is demand-driven and initiated by COs that see value in the activity. In situations where the CO lacks capacity for any component the RB is the first line of support, followed by HQ.

In most cases COs lack ICA GIS analysis capability. At the same time, CO staff in VAM and Programme often need conceptual and technical support from the RB/HQ. RB capacity to provide such support varies and COs often contact HQ directly. In these cases, HQ makes efforts to ensure RB engagement. Where possible HQ tries to build up RB capacity.

HQ leads in developing ICA guidance and methods, incorporating feedback from RBs and COs. All HQ elements of the partnership have a voice in future directions of the ICA.

Programme

In the CO, the Head of Programme (HoP) is responsible for initiating the ICA, maintaining a schedule in collaboration with the Head of VAM, coordinating inception and programmatic consultations with partners, ensuring the ICA Programme Recommendations paper is completed, and incorporating the results in programme design. The HoP may delegate this responsibility to another Programme Officer, but it is important that overall planning responsibility reside in the Programme unit to ensure effective linkages with the subsequent steps in the Three Pronged Approach (3PA), the Seasonal Livelihood Programming (SLP) and Community Based Participatory Planning (CBPP).

The RB Head of Programme is responsible for supporting CO Programme in these efforts, as required. As noted above, RB capacity and engagement with the ICA varies, and so HQ is often directly involved.

At HQ, the ICA Coordinator sits in the office of the Deputy Director OSZP and acts as the contact point and first line of technical support to CO and RB. The ICA Coordinator is also responsible for coordinating with RB and CO as needed, ensuring that all parts of the HQ partnership fulfil their roles, ensuring that the views of all partners are accounted for in methods and guidance, and for building consensus where different ideas exist.

Programme units in HQ are responsible for developing guidance as to how the ICA should inform programme strategies in different areas. Units are also responsible for commenting to the ICA Coordinator on relevant aspects of the ICA methodology from a programme perspective, on the relatively rare occasions where unsettled questions of methodology arise. The following units/divisions/offices are actively engaged in the ICA from a programme design perspective:

1. Safety Nets and Social Protection (OSZIS)
2. Emergency Preparedness (OSEP)
3. Asset Creation and Livelihoods (OSZPR)
4. Emergencies and Transitions (OSZPH)
5. Nutrition (OSN)
6. Climate and Disaster Risk Reduction (OSZIR)
7. Gender (GEN)

VAM

The CO Head of VAM (HoV) is responsible for collecting, analysing and mapping food security according to ICA standards. Further to this, the Head of VAM is responsible for doing the same for natural shock data and the other layers that comprise the ICA, bringing all the components together in the ICA Technical Report, coordinating the ICA Technical Consultations to present the results, and overseeing any necessary changes to data sources or thresholds.

In practice, because of gaps in CO capability, there are frequently significant deviations from the ideal case above. First, RB VAM should play a strong role in assisting CO to identify appropriate food security data sets and agree which are most appropriate. Identifying food security data that meets ICA standards (in particular, the need for data that covers the last five years on an annual basis whilst reflecting seasonality, and acceptable to all partners including government) is usually the biggest challenge in the ICA process. Thus, it is important that RB VAM ensure that CO receive necessary support in this area (and, if there is insufficient food security data available for an ICA, advise on possible alternatives). As part of its role to set standards and provide guidance, HQ VAM, in consultation with RB, may assist RB/CO to identify suitable food security or alternative data that meets ICA standards and applies methods defined and agreed by the ICA partnership, of which VAM is an important member. Second, HQ VAM Geo-Spatial (nearly) always develops drought risk data. Third, as described in the next section, HQ OSEP usually does all mapping, bringing together food security data from VAM at the CO or RB level, drought data from HQ VAM Geo-Spatial, and other natural shock and lens data from various sources.

Concretely, it is important that CO VAM – in collaboration with RB and, if needed, HQ – provide OSEP with a finalised food security data package for the ICA, after having considered all possible data options and identified the best data to use to meet the ICA requirements.

Emergency Preparedness

HQ OSEP provides GIS analysis and mapping support in cases where CO and RB capacity is insufficient. In most cases, OSEP does all parts of the process related to natural shocks and ICA categorisation, and maps out all lenses and additional contextual information with data obtained through liaison with the CO or other global sources.

For food security, OSEP take the final data package that comes from CO VAM as above, maps it, and uses the data to conduct the ICA analysis that leads to ICA categorisation. In some cases, when OSEP takes the lead on all analysis and mapping, it also puts the results into a completed ICA Technical Paper. OSEP is also a contributing partner in ICA methodological discussions.

4. WHEN TO DO THE ICA?

Support for WFP and national planning

A Country Office should do an ICA at any time that it foresees implementing Seasonal Livelihood Programming analyses, or discussing longer term programming strategies with government and other partners. The ICA is a dynamic tool that the partnership of contributors can and should update whenever significant new data (e.g. a new food security assessment) becomes available. In practice, this can often mean an update annually or every two years.

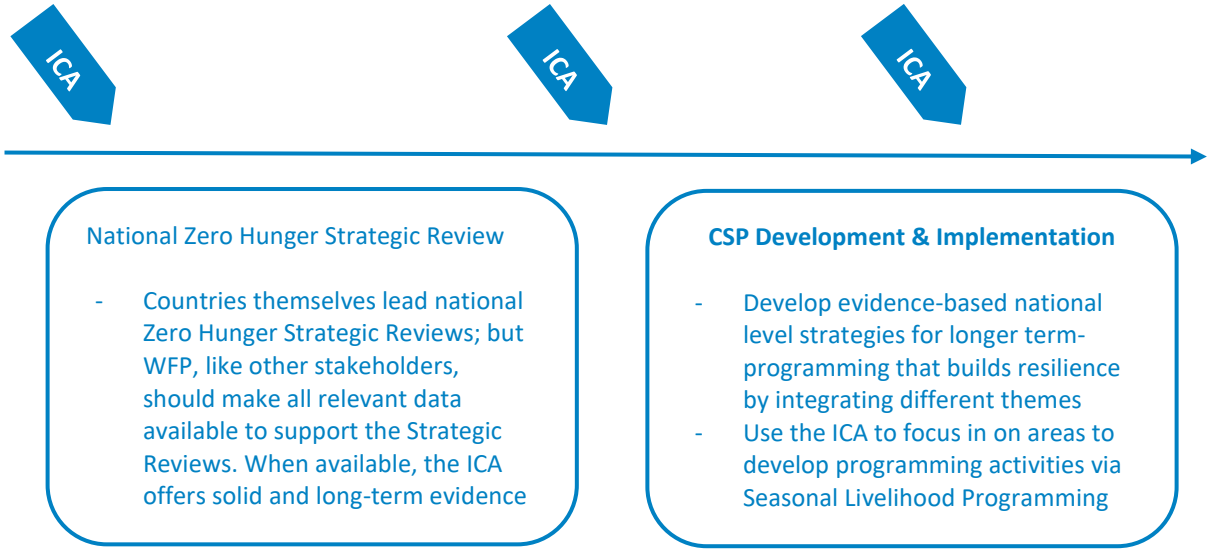
Links to the CSP

A national ICA provides a data-driven evidence base for building medium and long-term programming strategies in collaboration with partners. The ICA can inform the design of Country Strategic Plans (CSP) if available at that time and/or to guide the implementation of the CSP following its approval. The ICA, along with other analyses, can also provide statistical and analytical input to National Zero Hunger Strategic Reviews (NZHSR), as appropriate.

ICA identifies parts of the country where food insecurity is regularly above set thresholds. For example, the ICA food security trend analysis highlights areas of the country where food insecurity is consistently above a threshold set by the ICA partners. If the threshold is set as the national average of the percentage of food insecure people, the ICA maps will then highlight areas that are often above the national average. This will allow a strategic focus on these areas to push down the national average over time and support national goals.

ICA programmatic recommendations offer a coherent package of ideas about how to approach food security problems in different parts of the country, and link these to efforts to reduce the risk posed by climate-related natural shocks. This broad, thematic overview reflects longer-term trends and looks at lasting solutions, aiming to bridge the development/humanitarian divide. When such analysis is available, it can provide valuable input to stakeholders working on the NZHSRs.

Depending on when an ICA is conducted, it can guide the CSP's development as well as implementation, by providing an evidence base for placing food security focused safety net, disaster risk reduction, preparedness and early warning themes in different parts of the country. The emphasis on longer-term trends fits with the purpose of the CSP, and allows WFP planning to concentrate on meaningful longer-term change that feeds into permanent food security improvements.



5. How to do the ICA: Process and Key Steps

Process and Timeline

	Preparation Component
	Analysis and Mapping Component
	Consultation Points
	Programmatic Interpretation Component

Model ICA

#	Task	Support materials available	<month> 1	2	3	4	<month> 1	2	3	4	<month> 1	2	3	4	<month> 1	2	3	4
1	Draft ICA Concept Note, and share with RB Programme and VAM advisors, and ICA Coordinator at HQ	Concept note template																
2	Discuss / form Technical and Oversight committees with government																	
3	Inception Meeting with partners, to introduce the ICA concept and process, as well as explore data availability	Inception meeting agenda template, ICA Introduction PPT																
4	Collect necessary data at national level, including through liaison with government and other partners; ensure data meets quality standards, including check by relevant HQ units when needed	Data checklist and template																
Preparation Component Complete																		
5	Food Security Analysis – done as part of GIS training for ICA Analysis	(support from RB / HQ as needed)																
6	Shock analysis for storms, floods – done as GIS training for ICA Analysis	(support from RB / HQ as needed)																
7	Shock analysis for drought – done as GIS training for ICA Analysis	(support from RB / HQ as needed)																
8	Analysis for other ICA Lenses and Additional Contextual Information layers – done as GIS training for ICA Analysis	(support from RB / HQ as needed)																
9	Combine FS / shock analysis and make ICA maps – done as GIS training for ICA Analysis	(support from RB / HQ as needed)																
10	Prepare Technical Consultation materials	ICA Technical Paper template																
11	Technical Consultation with partners to present results for Analysis and Mapping Component ; also invite all partners to Programme Consultation	Technical consultation agenda template																
12	Technical revisions as required by Technical Consultation																	
13	Complete ICA Technical Paper template	ICA Technical Paper template																
Analysis and Mapping Component Complete																		
14	Programme Consultation with partners to determine programmatic directions, using ICA Technical Paper for reference	Programme consultation agenda template																
15	Complete the ICA Programme Recommendations template using minutes from the Programme Consultation	ICA Programme recommendations template																
16	Print final ICA report (optional)																	
Programmatic Interpretation Component Complete																		
ICA Complete → Next step is Seasonal Livelihood Programming																		

Consultation Points

Government Engagement is Critical

Ideally, WFP will discuss the idea of doing an ICA with government partners before starting any work, with the objective of making the government a full partner in the process. This partnership may be informal, simply founded on strong collaboration and mutual support, or formalised with (for example) a Steering Committee to oversee the entire ICA process and Technical Committee to support the core work. As gender equality is a central component of an ICA, consideration should be given to engaging the 'national women's machinery'; which may be a ministry, department, division or office dedicated to gender or women's affairs. Further to this, WFP can develop government capacity through trainings, for example both in using the ICA to support strategic planning, and in technical aspects of ICA analysis. Support for such trainings is available through RBs and HQ. COs should consider what form of collaboration with the government is most appropriate in their context, and look for ways to lay groundwork for transferring ownership of the ICA and future ICA updates to governments.

ICA Inception Meeting Ensures Buy-in from the Start

The ICA Inception Meeting is an important step to engage all partners early in the ICA process and develop buy-in and ownership. The Inception Meeting should occur before or parallel with starting data collection, as a launch point that initiates the collaborative process. A half day is usually sufficient for the Inception meeting.

The Inception Meeting is an opportunity to introduce the ICA concept and methods to all stakeholders, explain the process and administrative structures, encourage active participation in future consultation points, and explore initial suggestions for potential data sources.

Invitees should include representatives from stakeholders in food security and resilience activities, including government ministries, national NGOs, UN agencies, and international NGOs. Actual participants should include technical analysts (e.g. people who collect/analyse data on food security, vulnerability, climate-related shocks, gender etc.) and people (ideally, equally women and men) with expertise on implementing programmes[2] and the ability to speak for their organisations on these matters. These people will be the "core group" of ICA participants throughout the ICA process.

ICA Technical Consultation Ensures Partners Accept ICA Results

The ICA Technical Consultation occurs once technical analysis is complete and all maps and data tables are ready to share. As with the Inception Meeting, a half day should be sufficient. The purpose of the Technical Consultation is to ensure agreement amongst partners on the data sources, food insecurity thresholds and gender equality dimensions used in the ICA analysis. This is an important foundational step leading to the subsequent Programme Consultation. The Technical Consultation may result in suggestions from partners for change, for example if they are aware of superior data that could support any of the ICA components. There should therefore be at least two weeks between the Technical and Programme Consultations, to allow time for any needed revisions.

To support the ICA Technical Consultation, a CO may wish to mail out a draft version of the ICA Technical Paper so that partners can preview the results. The Technical Paper can then be finalised after the consultation. Alternatively, the Technical Paper may be develop and distributed after the consultation.

Participants should include all people who have been engaged in the technical analysis, as well as all people who will take part in the Programme Consultation so that they have a chance to discuss the results whilst there is still time to change data sources and thresholds. This will avoid having discussions around methods and data disrupt the Programme Consultation. In turn, this means that the Technical and Programme consultation should not occur back to back, i.e. on the same day or two days together. It is important to have a gap to make any necessary changes to the technical analysis.

ICA Programmatic Consultation Builds a Shared National Vision

The ICA Programme Consultation takes place after the ICA technical analysis has been finalised (including any revisions stemming from the Technical Consultation) and the ICA Technical Paper has gone out to all partners.

[2] At least one representative should knowledgeable and skilled in implementing gender-transformative programmes.

The Programme Consultation is where programme designers use the results of the ICA technical analysis used in a practical way. The primary objective is to get agreement amongst all partners on the ICA's strategic, theme-level recommendations for which combinations of safety nets, DRR, early warning and preparedness are most appropriate in which parts of the country, including note of where the standard ICA suggestions may not suit particular areas because of information not included in the ICA analysis. If possible, the Programme Consultation can also address issues of which types of safety nets (e.g. protective, productive, seasonal, year-round) are appropriate where, as well as the hazard-specific focus of DRR, early warning and preparedness; along with addressing the gender inequalities underlying prioritised themes and issues.

The Programme Consultation should also address next steps, for example moving into the Seasonal Livelihood Programming (SLP) component of the 3PA, or identifying need for further analysis of specific issues via ICA+. In this way, all participants can see the continuity between using the ICA to define broad national level strategy speaking of programme themes, and the SLP to populate these themes with specific activities.

Participants should include representatives with strong local knowledge from a broad cross-section of organisations working on food security, DRR and gender equality in the country. Ideally, these same individuals will work with the ICA from the Inception Meeting, so that they understand the ICA and its in-country application. The Programme Consultation outputs form the contents of the ICA Programme Recommendations report.

6. How to use the ICA to design better programmes

The First Step in a Process: From the ICA to Seasonal Livelihood Programming

It is important to remember what the ICA is for, and what it is not. The ICA is the first step in the Three-Pronged Approach (3PA), not a standalone product, and as such, its design serves a purpose complementary to the other steps in the process. Specifically, the ICA produces a strategic plan for longer-term food-security related programming in a country, spatially and at the thematic level; the relevant themes are safety nets, disaster risk reduction, early warning and emergency preparedness (described in the next section).

The second step of the 3PA, Seasonal Livelihood Programming (SLP), populates these theme with specific activities based on information collected at the provincial or district level on who (local population as well as WFP and its partners) is doing what, where and when. Thus, the ICA and the SLP serve very different but entirely complementary processes. For the best results, it is important to remember the different purpose of each tool, and implement them accordingly:

1. ICA: Helps to place broad programming themes geographically, at the national level
2. SLP: Populate these programming themes with specific activities, sub-nationally

Integrated Context Analysis (ICA) Programme Themes	Seasonal Livelihood Programming (SLP) Examples of specific activities
Safety nets	School feeding
Disaster risk reduction	Food for assets, crop insurance
Early warning	Capacity development for early warning system
Emergency preparedness	Development of Forecast based Finance system; capacity development for supply chain

Programmatic Themes Relevant to the ICA

Safety nets are a programme approach that provides predictable, reliable, and consistent assistance over time to people in need, allowing them to factor this assistance in their own planning and risk-taking decisions as they move toward self-reliance. Safety nets can take different forms and tackle different objectives depending on the context, e.g. protective-only, shock-responsive or productive.

Disaster Risk Reduction (DRR) is a theme that includes all efforts to reduce disaster risk, typically focusing on either exposure or vulnerability. In the setting of the ICA disaster risk refers to the risk posed by climate-related natural shocks, but of course, there are other causes of disasters. DRR efforts may be long or short term. The

nexus between recurrent shocks, persistent high levels of food insecurity, malnutrition and land degradation may guide a combination of climate adaptation, DRR and safety nets to support resilience.

Early warning may target a variety of audiences, from policy makers to individual households. In the ICA, early warning refers to warning of impending climate-related natural shocks. The key elements are that warning precedes a shock, and triggers some form of immediate action to reduce shock risk. Thus, early warning relates closely to preparedness, and is a component of DRR.

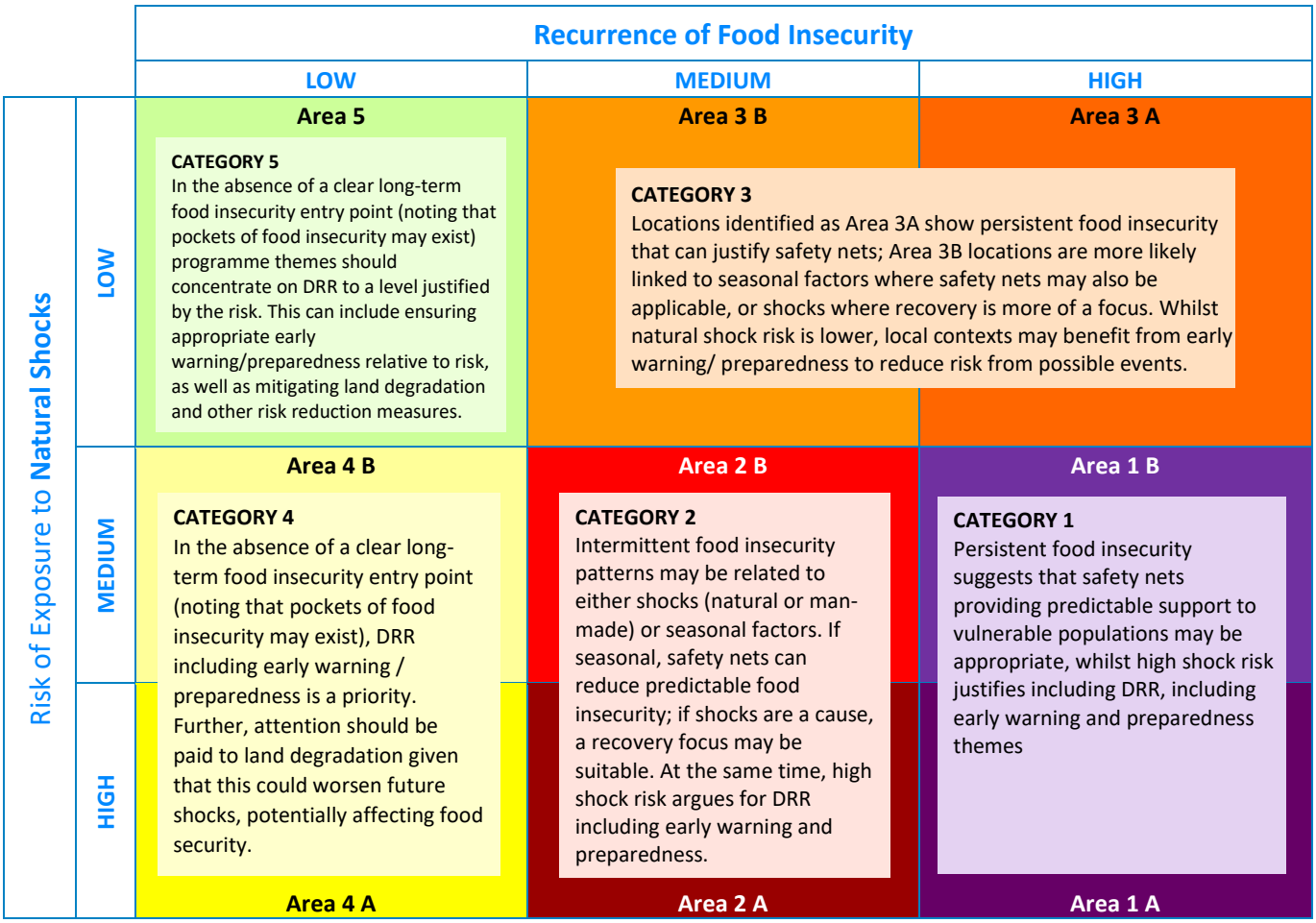
Preparedness is a DRR theme that refers to plans and actions that precede a climate-related natural shock event and reduce the risk and/or impact it poses. Preparedness can national, regional, within organisations or at the community or household level; all aspects are important. Because preparedness exists in the period before a shock event, preparedness systems should use early warning as a trigger; the two are thus tightly connected.

How to Interpret the ICA Categories and Areas Maps

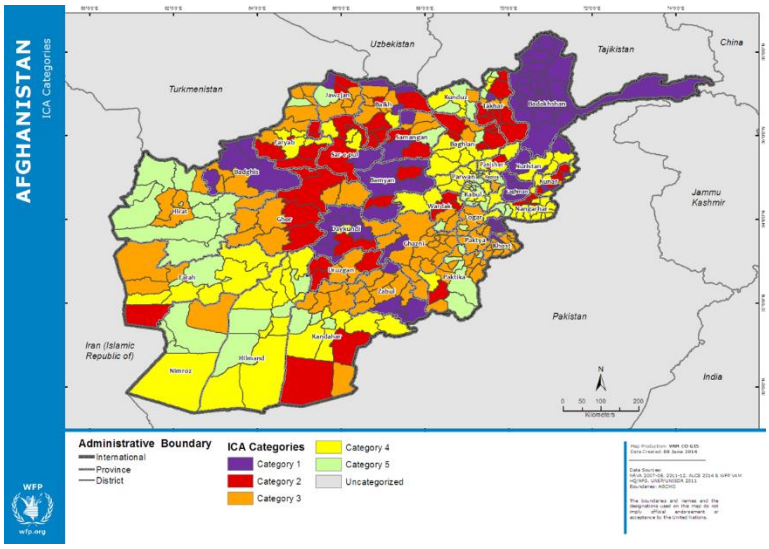
The ICA places a country's districts into one of nine Areas based on levels of recurring food insecurity and exposure to natural shocks.

Exposure to Natural Shocks	Recurrence of Food Insecurity above Threshold		
	LOW	MEDIUM	HIGH
LOW	Area 5	Area 3B	Area 3A
MEDIUM	Area 4 B	Area 2 B	Area 1 B
HIGH	Area 4 A	Area 2 A	Area 1 A

The nine areas condense into five ICA categories, each with a suggested combination of programme themes.



The ICA Categories map (example below) shows each district with its colour indicating its ICA Category. Thus, the colour of each district indicates a potential set of programming themes appropriate to contextual factors in the district. ICA process participants – WFP and external – should discuss and debate these suggested themes as part of the Programmatic Consultation. The ICA Areas map (not shown) follows the same principle and offers more detail, in particular on the difference between high and medium likelihood of natural shock recurrence in Categories 1, 2 and 4, and high or medium frequency of food insecurity in Category 3.



How to Use the ICA Data Layers

This section overviews how to think about and use the various ICA data layers to identify programme themes relevant to particular geographic areas. Each layer is included for a specific purpose. The ICA Areas and Categories, combine the core layers of food security and natural shocks to show the intersection of the main programme themes. Lenses and Additional Information layers can refine strategies identified via the Categories.

ICA Categories and Areas

ICA Categories

- Assists with broadly identifying where to place the thematic programme building blocks of safety nets, DRR and early warning/preparedness systems.

ICA Areas

- Adds detail to the process above, by showing the intersection of food insecurity and natural shock risk

ICA Core

Food Security Layer

- Helps to identify where food security safety nets (to provide predictable, consistent assistance) are needed by highlighting areas where food insecurity consistently recurs over the defined threshold.

Natural Shock Risk Layer

- Highlights areas where natural climate-related hazard risk are highest and thus DRR efforts are appropriate. These can merge into safety net efforts in areas with consistently high food insecurity.
- Contributes to defining regions where early warning and preparedness should be emphasised

Lenses

Land Degradation Lens

- Land degradation can heighten the impact of natural shocks, and is a major contributor to food insecurity. This lens shows where efforts to halt and reverse land degradation are required, either as part of safety nets, DRR or stand-alone programmes, and through policy.

Landslide Risk Lens

- Enables focus on specific areas where landslide risk is high, helping to refine DRR activities and where additional land stabilization/rehabilitation is required.

Nutrition Lens

- Shows where nutrition strategies may be required in both food insecure and food secure areas

Gender Equality Lens

- Shows where gender equality requires particular attention in all forms of programme design.

Additional Contextual Information

Intra-Annual Food Insecurity Variability

- Adds detail on when in the year food insecurity challenges peak, informing the yearly timing and duration of safety nets and/or other food security programmes

Inter-Annual Food Insecurity Variability

- Shows seasonal or shock-influenced patterns in food insecurity values, for programme refinement

Seasonality of Natural Shocks

- Assists with refinement of early warning and preparedness strategies by noting when risk is highest

Livelihoods

- Provides insight into how programme themes can be adjusted to local livelihood systems

Population Distribution

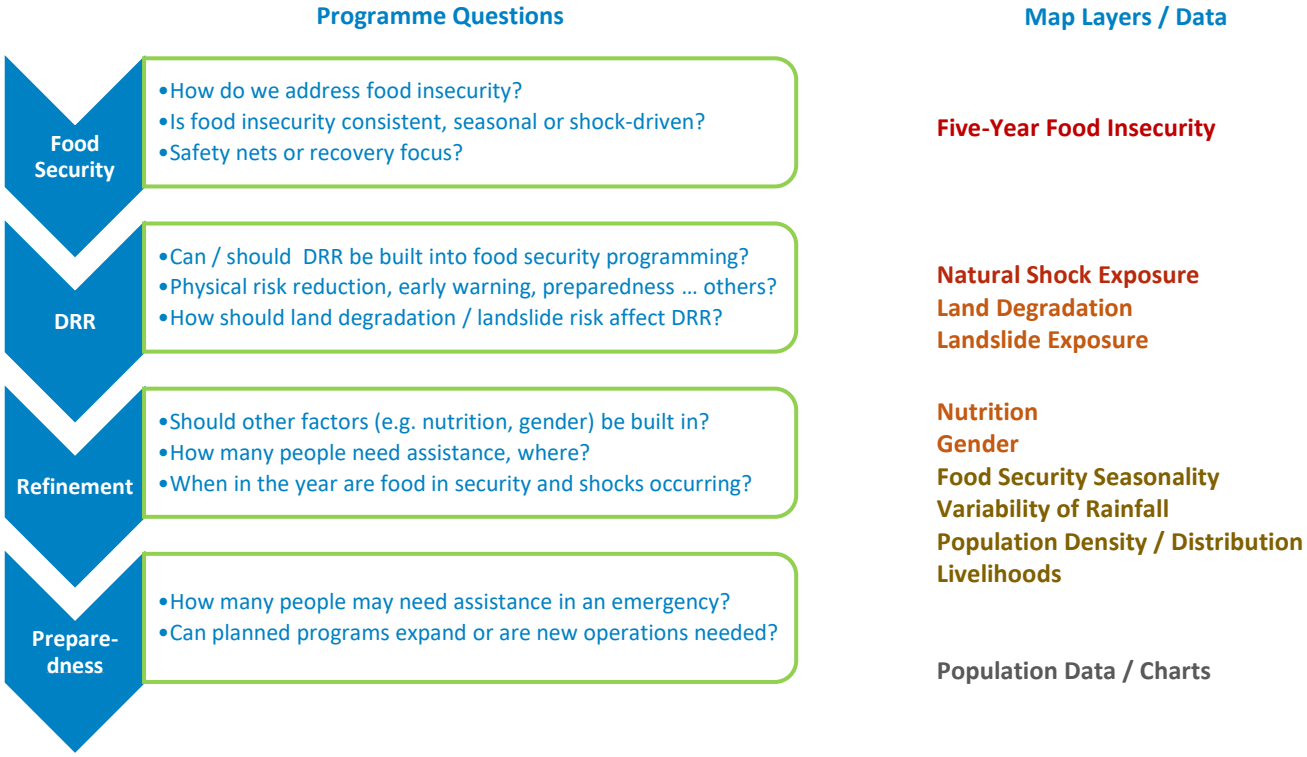
- Shows the geographic concentration of where people live

Numbers of Affected

- Estimates how many people are in need of long-term assistance, and how many may need assistance if a shock occurs, by looking at the relative levels of food insecurity over the past five years.

Programme Design Questions and Supporting Data Layers

This diagram shows programmatic questions on the left, and ICA map layers and data that can help to provide answers on the right. The questions follow a thought process.



ICA and Social Protection & Safety Nets

This section advises on using the ICA to support decisions on national social protection and safety nets strategies, and potential links with related processes.

Social protection and safety nets

Social protection is a set of policies and programmes designed and implemented by national governments to address poverty and vulnerability. As a subset of social protection, safety nets are of particular importance to WFP in addressing hunger and malnutrition.

In recent years, consensus has grown in defining safety nets as "formal or informal non-contributory transfers provided to people vulnerable to or living in poverty, malnutrition and other forms of deprivation". Thus safety nets require no payment from beneficiaries – such as contributory premiums to obtain insurance – and can be provided publicly and privately[3].

Predictability, longer-term transfers and government-provided are key features that distinguish safety nets from emergency response and act as a bridge between emergency response, early recovery and resilience building. Accordingly, safety nets are an important part of WFP's resilience strategy.

ICA and safety nets

An ICA contributes to the rationale for safety nets by highlighting areas with consistent food insecurity challenges where predictable long-term support can help beneficiaries manage risks and move to independence more effectively than ad-hoc, short, seasonal programmes that focus exclusively on saving lives and livelihoods. It also helps show where safety nets can be adapted to reduce the risk posed by natural shocks including where protective and/or productive safety nets could and need to be placed. For example, the 2012 Somalia ICA showed which areas had high population density, degraded lands, and high food insecurity and malnutrition levels over a series of years. This highlighted the need for longer-term, predictable (conditional and unconditional) transfers to the most vulnerable.

Overlaying the gender in/equality data further informs decisions and strategies pertaining to safety nets, particularly in relation to targeting and type. Consideration of gender data is essential given that social protection measures are not 'gender neutral'; and so choices should be informed and fair to population groups deemed 'at-risk' or 'vulnerable'.

The ICA also encourages joint planning with government and partners. The multi-faceted challenges that emerge from the context analysis demand diverse interventions that can only the government can lead in partnership with relevant stakeholders that bring elements of a comprehensive safety net programme. The analysis work ultimately needs to inform national level safety net and social protection policies and frameworks. Ensuring that the ICA sits in in the appropriate government bodies in combination with strong donor and partner support will create an enabling environment for this to happen.

Finally, the ICA estimates potential beneficiary numbers per area and can identify seasonal trends in food security and exposure to natural shocks. In addition to informing the scale of a safety net programme, this is crucial for a timely adjustment of beneficiary numbers (ideally by sex and age group) covered by a safety net programme in times of a shock.

Interpreting ICA maps for safety net strategies

The ICA categorises different parts of a country (usually second level administrative regions, e.g. provinces) according to their patterns of food insecurity and the level of risk they face from climate-based natural shocks.[4] The following is a brief non-prescriptive guide on how these factors can translate into ideas for safety net strategies. In all cases, it is useful to consider how productive elements can enhance safety net design.

[3] UPDATE OF *WFP's Safety Nets Policy, The Role of Food Assistance in Social Protection* (June 2012), pg. 8 para. 8

[4] The ICA defines nine "areas" by cross tabulating high/medium/low values for food insecurity, and for natural shock risk. These are condensed into five "categories" for simplicity. For details see http://pgm.wfp.org/index.php/Using_the_3PA#Integrated_Context_Analysis_.28ICA.29

- Safety nets for food security are appropriate where food insecurity is predictable all/mostly year-round (most likely found in ICA Category 1, and Category 3 in the "A" Areas)
- Seasonal safety net make sense where food insecurity is seasonal (most likely found in ICA Category 2 and Category 3 in the "B" Areas)
- Shock-responsive safety nets can support areas with high shock risk where an established food security safety net can absorb additional people falling into crisis (most likely ICA Categories 1 and 2, where additional people at risk do not add too much to the numbers of the most vulnerable)
- Regular safety nets with an additional protective safety net in the event of crisis can support areas exposed to shocks where additional people at risk of falling into crisis are beyond what can be absorbed by the regular safety net. (most likely ICA Categories 1 and 2, where there are large numbers of additional people at risk relative to the most vulnerable)

The ICA and wider social protection discussions

The core ICA provides a geographic picture of food-security and climate-based natural shock needs relevant to national and sub-national social protection. It does not assess the existence or quality of existing services, and there are many other needs-focused considerations not included in the basic ICA.

At the same time, widely used tools that provide a geographic perspective on needs or coverage/quality of social protection service delivery, particularly with gender data concurrently mapped, are lacking.[5] With this in mind, there are three main ways that the ICA can support broader national discussions on social protection.

First, the core ICA can be used as an input into national dialogues – whether based on a tool such as the CODI or otherwise – on social protection and safety nets, and in particular to highlight the need to include food security as a core consideration of such discussions. The ICA brings the benefit of being data-based rather than qualitative, and showing trend-based rather than snapshot data whilst underlining geographic disparities.
Second, the core ICA can expand into an "ICA+" by adding additional data layers addressing relevant issues. The following section discusses the ICA+ concept in more depth.

Third, the ICA is a tool to advocate for discussion on social protection and safety nets, as well as related data collection. The ICA maps show areas where food security safety nets may be appropriate, and the process of developing the maps and discussing the results in partnership with the government is an excellent platform to stimulate discussion. Gaps that emerge in data for either the core ICA or an ICA+ provide an opportunity to encourage better collection.

Going further: the ICA+ Social Protection concept

The ICA provides a flexible foundation upon which to add additional data layers to broaden the scope of analysis. The following are suggestions that can help to expand the context picture in terms of geographically distributed needs relevant to social protection considerations. The guiding principle of developing an ICA+ is to include only data that directly supports defined decisions.

- Unemployment/Livelihoods data can be used to highlight areas where labour market interventions may be appropriate
- Poverty/Income data can underline areas with high levels of financial vulnerability.
- Demographics/Age data can show areas where interventions may best focus on the elderly or youth
- School participation data can pinpoint regions where education needs attention
- Rates of infectious disease can help focus health interventions
- Drug use rates may be useful when considering health
- Disability rates, if there is reason to believe that these have an uneven geographic distribution, e.g. if there are connections to infectious diseases or conflict, they can show where disability is an important factor of vulnerability
- Data on remittances, solidarity contributions (donations, alms, etc.) may be useful either as proxies of vulnerability or resilience, depending on the context.

[5] Two existing tools are the Asian Development Bank's Social Protection Index (SPI) https://blogs.adb.org/blog/all-you-need-know-about-adbs-social-protection-index and the Social Protection Inter-Agency Coordination Board's Core Diagnostic Instrument (CODI) www.ispatools.org . The SPI is a national level indicator derived from other statistics. The CODI is not currently widely used at the time of writing.

- Gender: wherever possible, data on the following subjects should be disaggregated by sex and age in order to identify different needs where they exist and so who should be targeted (and benefit).

Informing WFP services to government

In defining its portfolio of activities, in particular technical advisory and capacity-building services in social protection for key government bodies, WFP will need to have an evidence-based overview of the multiple systems at play, including the complex webs that define food systems and coordination and complementarities between international, national and United Nations development partners. The ICA and the ICA+ for Social Protection can provide the foundation for this overview, and coupled with in-depth qualitative reviews, inform WFP in identifying key entry-points and strategic partnerships to support its contribution to the development of social protection in the national context.

ICA and Disaster Risk Reduction (DRR)

This guidance highlights how the ICA can inform the design and development of disaster risk reduction (DRR) programmes in a conceptual sense. Following sections discuss how the ICA can support three main areas of DRR programming: Physical measures to reduce risk, early warning, and emergency preparedness. All of these areas have links to policy and legal frameworks.

Disaster Risk Reduction

Disaster risk reduction (DRR) is cross-cutting and bridges emergency response, recovery and development. Disaster risk reduction is defined as "the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events."

WFP places its disaster risk reduction and management activities in the context of broader resilience-building efforts supporting the most vulnerable people, communities and countries. Resilience is "the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions."

As many climate change impacts will materialize through increases in the frequency and intensity of extreme weather events, disaster risk reduction is a key component of adaptation strategies. Supporting governments and food-insecure and vulnerable communities in ways that enhance their disaster risk management capacities is therefore an objective of WFP that supports both reducing hunger risk and climate change adaptation efforts.

ICA and Disaster Risk Reduction

An ICA contributes to providing the overall rationale for DRR interventions by highlighting parts of a country where climate-related natural shock risks are highest. Further, it shows where these risks intersect with food insecurity that recurs with varying degrees of regularity. The risk layer alone is relevant to all actors who are involved in DRR efforts, whilst the perspective of combined risk and food insecurity allows WFP to geographically target food security interventions that include DRR components.

The ICA can also prompt joint planning with government and partners. The multi-faceted challenges that inevitably emerge from the context analysis demand an equally diverse set of interventions that can only be done under the leadership of the (local) government and in partnership with relevant stakeholders that bring elements of a comprehensive disaster risk reduction programme to the table.

ICA findings can inform the policy and strategy of government and partners. The analysis work ultimately needs to inform national level DRR policies and frameworks. These can be tied into climate change related planning as well, to ensure that disaster risk reduction strategies consider current risks, as well as ways that risks may evolve over time.

ICA and DRR: Physical Measures to Reduce Risk

This guidance discusses how the ICA can support geographic targeting of projects to implement physical measures to reduce natural shock risk.

Physical measures to reduce natural shock risk

Physical measures that reduce the risk that natural shocks pose are a critical component of DRR programming, and complement other measures such as early warning systems and emergency preparedness protocols and capabilities. Examples of physical measures vary by the natural shock of concern; below are some examples for the climate-related shocks often included in ICA analysis. All of these examples share the common goal of savings lives and livelihoods.

- **Floods:** Flood embankments, elevated housing/storage spaces/animal refuges, dams, reforestation, wetland conservation/rehabilitation
- **Drought**: irrigation systems, water capture/conservation/storage systems
- **Tropical cyclones:** storm shelters, housing/storage spaces/animal shelter strengthening

Physical measures, early warning and preparedness are components are part of a layered system and manage risk in different ways, on different timeframes, and in response to different types of risk. Physical measures are a long-term risk reduction measure and their implementation account for long-term baseline risk. For example, to prioritise where to put physical measures to reduce the risk that flooding poses, it makes sense to look at flood risk tables that include at least 100-year floods (floods with a 1% chance of happening in any given year), and locate projects in areas where people live and that are at risk. It also makes sense to build defences to a set level of risk, for example to make an embankment high and strong enough to withstand a 100-year flood. This provides a measurable level of protection around which it is possible to design early warning and preparedness systems. In other words, early warning and emergency preparedness can be calibrated to cover and respond to the residual risk left over after physical measures are in place. For example, if a flood embankment covers the 100-year level, early warning can target potential floods over that level, and trigger emergency preparedness measures in and for potentially affected areas.

Physical measures also make the most sense in places where shocks occur frequently, so that early warning and emergency preparedness systems (and associated responses) are secondary rather first lines of defence. It is not sensible to trigger emergency preparedness and response measures every two or three years, when it is possible to reduce risk physically to the point that emergency response is only needed every 50 or 100 years.

Physical measures to reduce risk can combine at the local level to maximise their effect, and in practice, different actors with different capabilities and mandates often implement different measures. To get the best results these circumstances require collaborative planning and implementation, with thought given to how A) physical measures of different scales will work together, and B) how early warning and preparedness systems can complement physical measures.

ICA and physical measures to reduce risk

The ICA data layers, and the associated ICA Categories, can contribute to strategic planning as noted in the previous paragraph, by providing a broad overview of where exposure to shocks is highest, and where these intersect with recurrent food insecurity and other aggravating factors such as land degradation. This allows WFP and its partners to arrive at a broad consensus on where DRR programme focused on physical risk reduction are most appropriate, and further on where these can link to efforts to reduce food insecurity.

Interpreting ICA maps for physical measures to reduce risk

Physical measures to reduce risk are most appropriate – broadly – in places with high likelihoods of exposure to shocks. In the ICA, this means Categories 1, 2 and 4, with strongest emphasis on Areas 1A, 1B, and 4A. It is important to note, however, that there may still be places in other categories where exposure warrants physical risk reduction. The ICA Categories capture overall trends, not fine grain detail.

The ICA Categories/Areas maps are particularly useful for WFP and other partners with a food security mandate, because they show where recurrent food insecurity intersects with exposure to shocks. This combination is strongest in Categories 1 and 2. The food security part of the intersection provides WFP with its entry point to

engage with the natural shock exposure. In places without the food security entry point (e.g. Category 4), non-food security mandated partners will still have a strong interest. The combined natural shock exposure map in the ICA can help to clarify where natural shock risk is highest, without considering food security; again, this perspective may be of interest to non-food security mandated organisations.

The Land Degradation Lens (and Landslide Risk Lens, when included) can further inform strategies regarding where to place physical risk reduction measures, given the need in these cases for landscape restoration and preservation.

Note that programmes to reduce risk with physical measures can be linked with food interventions to form productive safety nets. Productive safety nets enable people to receive cash or food based transfers to address their immediate food needs, while they build or boost assets, such as rehabilitating degraded land, that will improve their livelihoods by creating healthier natural environments, reducing risks and impact of shocks, increasing food productivity, and strengthening resilience to natural disasters.

ICA and DRR: Early Warning

This guidance describes how the ICA can support thinking about early warning from a programme design perspective, and strengthen operational early warning systems.

Early warning

Early warning is a process intended to trigger emergency preparedness actions ahead of a shock event to mitigate risk. The key parts of an early warning system are risk identification, risk monitoring/analysis, warning communication, and clearly defined connections to preparedness actions.

Early warnings can trigger actions by national and sub-national government authorities, local communities and humanitarian actors such as the WFP; an ideal system horizontally and vertically integrates warnings and actions across these levels. At a community level, early warning can enable residents to reduce risk to their lives and assets, as well as those of the community. Governments and other humanitarian actors can act on warnings to launch the machinery of a response into action before a shock event occurs. It is critical that warning communication be tailored to the people expected to act.

Early warning systems should develop around the actions they should trigger. This includes considering the amount of time preparedness actions will take, how they are inclusive of all members of a particular community /region (noting variability by gender, age, disability, access to technology etc.) and how long their effects will remain valid, and timing warnings accordingly. Because early warnings always refer to the future rather than the past or present they are inherently probabilistic in nature. It is important to balance the interest in providing as much lead to time for action as possible with ensuring warnings are certain enough, and reach all potentially affected persons, to justify the cost of actions.

ICA and national early warning strategies

Discussing national level early warning strategies can help WFP make better use of national early warning services which already exist, work to fill gaps that may be found, and identify areas where capacity building is desirable.

The ICA can support the design of national early warning systems and disaster risk reduction strategies. ICA maps show the level of risk that climate-related natural hazards pose in different parts of the country, and this information can identify broad areas where ensuring effective early warning should be an important part of disaster risk reduction. The ICA also provides evidence of what types of shocks are priorities for warning in different areas.

In principle, early warning that warns communities is useful countrywide. Even in areas where shocks are infrequent, they can happen, and in these areas, communities may be the least prepared. Community-focused early warning can enable communities to prepare in case a shock does become likely, especially if warning links to basic preparedness training and includes an understanding of gender roles, relations and responsibilities within the community.

In places where shock responsive safety nets are being considered (e.g. where shock risk is high, and the expected number of people who would need assistance if a shock were to occur could be absorbed by an expansion of the safety net), early warning systems should be designed to trigger scale-ups.

In places where the estimated number of people potentially affected by shocks exceeds the capacity of a safety net programme to absorb additional beneficiaries, early warning should be linked to preparedness measures that when enacted enable more effective, efficient and inclusive emergency response.

In the programme design process, it is important to think of early warning as a theme that can support other programmatic approaches. Most critically, when linked with effective emergency preparedness actions early warning can help to protect the gains made by all forms of development. For example, assets built up by a community with the support of a national programme may be vulnerable to a potential shock such as flooding. In such a situation an effective early warning system can give communities an opportunity to protect their assets prior to a shock, thus preserving gains already made.

ICA and WFP early warning

Early warning in WFP is part of preparedness/readiness actions via the Emergency Preparedness and Response Package (EPRP), in which it should trigger Emergency Readiness Actions.[6]

The ICA can help to focus risk identification and monitoring for early warning purposes, by highlighting where in a country the potential for exposure to a shock is highest; and, when considered in relation to the gender equality analysis, the persons who are particularly at risk. The seasonal component of the ICA goes further to inform on when in the year the different shocks are most likely to occur. The seasonal aspect directly relates to the EPRP's Emergency Readiness Actions, by helping, along with other seasonal calendars, to set a review date when a CO can decide whether seasonal risk requires additional readiness actions. For example, in countries where flood risk is directly linked to rainfall, just prior to the rainy season a CO may wish to review its readiness status with particular focus on flood prone areas; the same could apply for dry seasons and drought.

The ICA can also support early warning communication. The ICA areas provide basic information related to the vulnerability of people living in different areas. For example, if there is an imminent flood in a given area, it can be useful to communicate to decision makers that the region has a history of high food insecurity and exposure to shocks, because this gives some (albeit very rough) idea of the potential scale of impact.

ICA+ Early Warning for a deeper understanding

Adding additional data to the core ICA can add significant value for early warning usage. The following are layers that can add value, noting that sub-national data availability will vary across countries. Conceptually, the intent is to move beyond hazard risk defined simply as geographic exposure to a more human-focused vision of vulnerability. This can A) sharpen the geographic focus for risk identification, and B) enrich warning communication by offering a better understanding of the potential impact of impending events.

1. High resolution hazard risk maps can show with greater precision where the potential for exposure is highest
2. Hazard maps can be combined with population distribution data (e.g. Landscan) to show rough approximations of the number of people who live in areas likely to be exposed to hazards
3. Data that indicates extent and types of gender inequalities that influence vulnerability and both access to and engagement with early warning systems.
4. Livelihood and poverty line / income level data can deepen the understanding of who lives in areas likely to be hazard affected.
5. Data on crop types and seasons can help to give some idea of potential cross losses
6. Critical infrastructure maps can help to understand the potential logistical impacts of shock occurrence

[6] See http://opweb.wfp.org/pages/?PageID=228

ICA and DRR: Emergency Preparedness

This guidance highlights how the ICA can support WFP and national emergency preparedness.

ICA & national preparedness strategies

The ICA includes maps showing where in the country different climate-based natural shocks are most likely, and estimates of the number of people in different areas who may fall into crisis if a shock occurs based on past patterns of food insecurity. Using this information, WFP and its partners – including government – can identify areas where emergency preparedness is a priority, and include this as an integrated part of broader ICA-based planning that also includes placing priorities for safety nets, DRR and early warning, underpinned by gender in/equality considerations. Areas with higher likelihood of shock occurrence and food insecurity as well as vulnerability to shock occurrence – including considering factors of gender – should be higher priorities for preparedness, noting that the maps are only one input into discussions.

Looking deeper, the ICA highlights the difference between numbers of people living in an area who need consistent, longer-term assistance, and those who are more likely only to need support in the event of a shock. This analysis can be used to identify areas where longer-term programmes can be designed to absorb additional beneficiaries – and identifying which of women, men, girls and/or boys – when needed including via shock-responsive safety nets, and areas where preparedness needs to include planning for additional emergency response interventions.

The ICA process offers WFP an opportunity to discuss emergency preparedness strategies and plans with partners at the national level. This in turn lets WFP align its own preparedness strategies with national partners, priorities and risk perceptions.

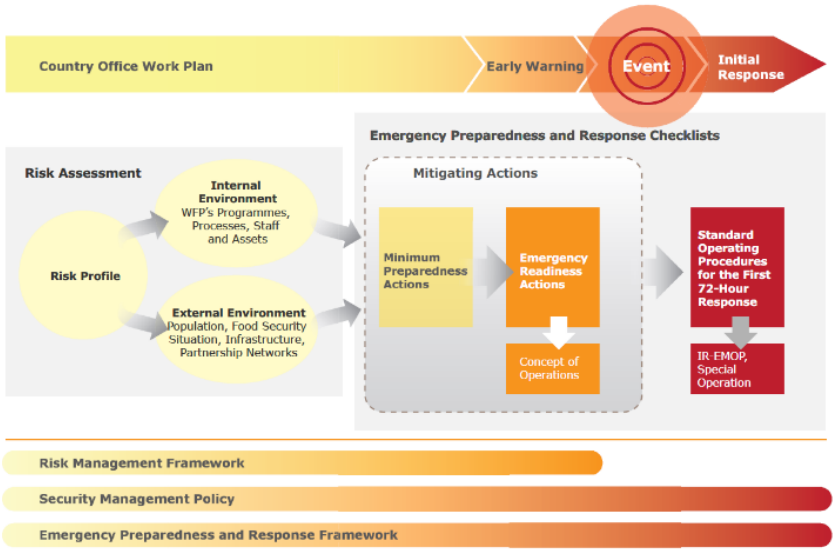
ICA and the Emergency Preparedness Response Package (EPRP)[7]

The Emergency Preparedness and Response Package (EPRP) guides Country Offices (CO) on a two-part set of actions that combined to reduce risk posed by contextual risks (external to WFP and outside its control) that could affect ongoing operations or create need for new ones.

EPRP risk assessment

Risk assessment is the first part of the EPRP and involves risk identification, analysis and response of the following types of potential shocks:

- natural hazards, such as earthquakes, floods, cyclones, droughts or pandemics
- armed conflict and civil unrest
- restrictive government legislation, such as export and import bans



- drastic socio-economic changes, such price surges for essential goods
-

ICA climate-related natural shock risk maps provide an evidence base for identifying risks at a sub-national level, by showing where shocks are most likely to occur. This can enhance EPRP-based preparedness by improving geographic targeting as well as strengthening estimates of the number of people potentially affected. The ICA also combines this information with at least five years of data on food insecurity,

[7] See http://opweb.wfp.org/pages/?PageID=228

thus showing where both shock and food insecurity likelihood is highest. The ICA can also support risk assessment by providing estimates of the number of people in different areas who may fall into crisis if a shock occurs, along with highlighting particular vulnerabilities related to prevailing gender inequalities; this directly relates to the EPRP concept of risk impact, whilst the shock maps speak to likelihood.

EPRP Checklists

Minimum Preparedness Actions (MPAs) are a non-risk-specific checklist that COs must implement to ensure a minimum level of preparedness in all functional areas. Emergency Readiness Actions (ERAs) are a second, risk-specific checklist implemented when a risk is imminent or when a high-impact, sudden-onset event such as an earthquake is anticipated, to enhance the CO's response readiness.

As with risk identification and assessment, COs can use the ICA's geographic information on shock likelihood and potential impacts the make sure that ERAs are defined in a geographically and context specific manner for maximum effectiveness and efficiency. ERAs can be tailored ensure readiness to respond in specific areas, and in support of broad estimates of numbers of people. Further, the ICA's information on the seasonality of shock occurrence and of food security can further refine ERA design, and support decisions on when to trigger ERA for shocks with a seasonal element.

ICA lenses to support preparedness

Additional data lenses added to the core ICA could further support preparedness planning, including:

- Road and other response infrastructure networks (e.g. rail, airports, ports, response depots)
- WFP offices, warehouses and areas of operations
- Past conflict intensity (particularly in cases where resurgent conflict is a risk)
- Access maps (including both areas and roads) in countries with existing access challenges
- Gender (inequalities, vulnerabilities, particular needs etc.)
- Nutrition trends

ICA and programmatic preparedness

Looking beyond the EPRP, when used as part of the Country Strategic Plan design process, the ICA can help COs think about where and how planned longer-term activities – implemented by WFP or by partners – can be designed to scale up in response to increased and particular shock-driven needs of women, men, girls and boys. Once it is known where WFP activities will occur and how many, and which, people will be assisted, the ICA gives estimates of additional people (noting sex and age) in the areas who may become food insecure if a shock occurs. If the number of people who are likely to need emergency assistance in case of a shock event could be absorbed into an existing programme, flexibility to scale up to potential needs should be included in the programme design or based on the risk look at alternatives

Further to this, and particularly relevant in situations related to slow-onset shocks (i.e. drought) it may be possible to scale up existing activities in anticipation of the shock itself, in response to forecasts, to minimise risk at the community level. This could reduce the need for a stand-alone emergency response. In areas where the ICA shows a high risk of drought, it may be useful to design programmes to take advantage of this possibility.

Timelines and reviewing

Once completed, an ICA can easily be updated on a yearly basis, data availability permitting. The updated ICA can feed into the review of MPA implementation which should be carried out by Country Office Management every six months or as determined by the seasonal hazard calendar. The ICA is also a resource material for the Country Office Annual Performance Plan and risk analysis exercise.

ICA and Forecast Based Finance

Forecast Based Finance

Forecast Based Finance (FBF) is a particular arrangement of early warning and preparedness measures, linked to financing. By forecasting the potential increase in the number of people facing a food gap through a natural hazard shock, implementing scaled up or new activities to reduce the (expected) gap, and paying for these actions with funds that are released when pre-determined natural hazard forecast threshold is exceeded, FBF is changing the way the humanitarian system responds to climate-disasters.

FBF focuses on humanitarian actions that can take place before a natural hazard shock, in the critical window between a meteorological forecast and an extreme-weather event (e.g. storms, floods and droughts), with the principle aim of reducing food insecurity, saving lives and livelihoods. While standard natural-hazard preparedness planning is based on average risk, FBF focuses on pre-determined actions and resources needed to mitigate and manage above-average risk as informed by a meteorological/hydrological early warning – thereby reducing the impact of a predictable natural-hazard crisis.

The FBF concept has three core components:

1. Developing and/or identifying natural-hazard thresholds that when forecast to exceed, trigger an early warning and early actions at national and community levels;
2. Creating and/or operationalizing Standard Operational Procedures (SOPs) that link early warnings to specific early actions;
3. Committing and/or identifying resources necessary to implement these actions when triggered by early warning.

FBF, Programme Themes, and Geographic Targeting via the ICA

FBF creates an anticipatory system that fills the gap between long-term physical disaster risk reduction interventions and post-disaster humanitarian relief efforts. As such, FBF is a format that can scale up any activity that is aimed at reducing a food gap, if that food gap can be expected to grow due to the impact of a predictable natural hazard-shock. This can include providing assistance as a preventative measure ahead of the growing food-gap. Based on the ICA, FBF can apply in areas where programmes targeting food gaps are envisioned. For example, seasonal safety nets or DRR activities can expand to absorb people who will likely face a food gap or loss of livelihood in the event that a forecast natural hazard occurs.

Broadly, FBF makes the most sense in places where the likelihood of a natural-hazard occurrence is high, and where natural hazards contribute to food gaps and/or loss of livelihoods and life. In the ICA, this means that Categories 1 and 2 (in particular Areas 1A and 2A) may offer opportunities to scale up existing programmes in response to a forecast.[8] In Category 4 zones – where potential shock exposure is high but food insecurity is low – FBF-style activities are more likely to have to launch in a context of low organisational presence, requiring increased preparedness (see the next paragraph). In zones where food security fluctuates seasonally (potentially Areas 2A and 2B) the timing of seasonal assistance may benefit from linking to weather forecasts.

Further to this, FBF relies on a functioning early warning system (EWS), or have significant components of an EWS in place. Thus, it makes sense to assess the early warning systems in areas where an FBF approach/component is planned. Likewise, FBF requires preparedness (interventions need to be launched/scaled up very quickly in response to early warnings), and so it is important to have functioning disaster response plans where SOPs for anticipatory preparedness can be developed/refined and integrated to augment and enhance functioning response procedures.

The ICA brings together the broad programming architecture for a country with evidence based geographic positioning. FBF is a way of structuring activities that the ICA can focus spatially. Where FBF methods are applied, they have the added advantage of protecting the gains and outcomes resulting from regular/on-going programmes, by helping to reduce the humanitarian impacts of natural hazard shock events.

CATEGORY 1	Persistent food insecurity suggests that safety nets providing predictable support to vulnerable populations may be appropriate, whilst high shock risk justifies including DRR, including early warning and preparedness themes. **FBF can help develop SOPs for planned safety nets, including DRR components, which in turn can make safety nets adaptive to changing needs.**

[8] Note that whilst ICA Categories 1 and 2 have medium/high recurrence and medium/high natural shock likelihood, the ICA does not imply that shocks cause the food insecurity. To some extent, we can assume that shocks do affect food security, but we do not know the extent of the linkage, and many other factors can contribute. Comparing shock events in the last five years with changes in food security levels in the same period may more strongly suggest a link, as may consideration of findings in food security analyses.

CATEGORY 2	Intermittent food-insecurity patterns may relate to either shocks (natural or human-caused) or seasonal factors. If seasonal safety nets can reduce predictable food insecurity; if shocks are a cause, a recovery focus may be suitable. At the same time, high shock risk argues for DRR including early warning and preparedness. **FBF can enable seasonal safety nets to A) scale up in case of a likely shock, and B) act/scale up early before the event to provide preventative assistance.**
CATEGORY 3	Locations identified as Area 3A show persistent food insecurity that can justify safety nets; Area 3B locations are more likely linked to seasonal factors where safety nets may also apply, or shocks where recovery is more of a focus. Whilst natural shock risk is lower, local contexts may benefit from early warning/ preparedness to reduce risk from possible events.

ICA and Nutrition

This guidance outlines how the ICA, including the ICA Nutrition lens, can support programming decisions on where, broadly, to target further nutrition analysis, and on where programme designers should consider integrating nutrition objective with other programmatic themes.

Nutrition programming

With the adoption of the 2030 Agenda, the importance of nutrition as a contributor and outcome of poverty was placed at the centre of the global policy framework for sustainable development. Adequate nutrition throughout the different phases of life is essential for growth and healthy physical and mental development and for the future of a nation

WFP's nutrition-specific interventions aim at the immediate causes of malnutrition. Nutrition-sensitive programming address the underlying causes of malnutrition and means leveraging programmes that operate in sectors complementary to nutrition (such as agriculture, education, social protection) to improve nutrition outcomes. Both nutrition-specific and nutrition-sensitive are mutually reinforcing and complementary.

Ensuring nutrient needs are met before, during and after emergencies is central to WFP's work as the changing nature and frequency of crises amplify already-critical levels of malnutrition. Sudden shocks and protracted crises can increase levels of malnutrition. While treatment is essential, preventing malnutrition before it occurs prevents the suffering it causes and is cost effective. WFP's programing to prevent acute malnutrition focuses on addressing nutrient intake and improving the food security situation in light of WFP's comparative advantage, while other partners address other underlying causes of malnutrition such as controlling disease, promoting optimal infant and young child feeding practices, and ensuring adequate water and sanitation facilities. WFP's programming to treat MAM relies on the provision of specialized nutrition products where appropriate, in addition to provision of routine medical care and promotion of optimal health and nutrition practices through nutrition assessment, education and counselling.

WFP advocates at the global, regional and country levels to support programmes and enhance national capacities for overcoming barriers to the availability, access, demand and consumption of safe, healthy and nutritious food (New Nutrition Policy 2017-2021).

Nutrition situation analysis

WFP and partners employ various situation analysis tools to understand key questions of who, what, when, where and why in relation to malnutrition. These include, among others, the Fill the Nutrient Gap tool, currently in its roll out phase in countries around the world.

The FNG brings together secondary information and linear programming to support national strategies around the barriers to adequate nutrient intake. Conducting the FNG increases the understanding of nutrient access and affordability among stakeholders from different sectors. The FNG links data analysis to decision making by modelling different interventions, modalities and platforms to improve purchasing power, lower price or increase availability of nutritious foods for key vulnerable groups. The FNG focuses primarily on nutrient access and intake, prioritizing the food system. It is complementary to a broader situational analysis on health, caring

practices and WASH. Combining FNG analysis with analysis on the socio-cultural barriers to adequate dietary intake highlights the linkage between access and behaviours.

The ICA and Nutrition Situation Analysis

The ICA does not replace or compete with the Fill the Nutrient Gap tool, or any other in-depth nutrition analysis tools. Instead, the ICA is a platform upon which the top-level geo-referenced results of in-depth nutrition studies can overlay, with the intent of identifying where in a country various programme themes should be nutrition-sensitive, and where nutrition-specific interventions may be appropriate. As mentioned, the ICA only shows high-level results, outcome related results. Its main utility from a nutrition perspective is to match up summary nutrition information with summary information relevant to other programmatic themes (e.g. safety nets, DRR, emergency preparedness and early warning), such that areas of overlap can be easily identified. This level of information only speaks to thematic level thinking about programming: the ICA, including its nutrition component enables only statements such as "for district X, we should consider programming that targets malnutrition", as opposed to any statement about specific nutrition (or other) activities. Programme designers can only identify activities after deeper and robust nutrition situation analysis and a good understanding of the drivers of malnutrition (for instance, MICS, SMART, DHS, the Seasonal Livelihood Programming process to name a few.).

The ICA may also be able to serve as a source of georeferenced information relevant to nutrition analysis and useable in processes such as in the Fill the Nutrition Gap analysis. Specifically, a standard ICA will contain time series data on food insecurity, data on natural shock likelihoods, and basic information on livelihoods (e.g., the number and physical distribution of livelihood groups through maps of livelihood zones). Thus, the relationship between an ICA and nutrition situation analysis is potentially mutually supportive, with ICA data feeding into the nutrition analysis, and nutritional analysis outputs overlaying ICA categories.

Thinking about Nutrition in ICA Categories

A high prevalence of malnutrition (stunting, micronutrient deficiencies or wasting) within any ICA category signals nutritional issues and a high likelihood of inadequate diet lacking essential nutrients. The seasonality of malnutrition will indicate the presence of aggravating and contextual factors (e.g. increased food insecurity, increased morbidity, migration during the hunger period etc.) that would need to be factored in the response in addition to addressing the underlying factors of malnutrition. The programme response needs to be nutrition-sensitive and include a nutrition objective, outcomes and indicators, regardless of the general theme appropriate to the other ICA evidence.[9] The content of the nutrition response and how the nutrition component is implemented depends on the context - food security and nutrition situation, capacity, other risks factors (disease, access to cooking facilities), national policies, partnership etc. I

Based on the situation, resources and the analysis of the specific context, the nutrition component might include either prevention of malnutrition (of wasting, micronutrient deficiencies or stunting) or treatment of MAM, or a combination of both. However, it also supposes broadening the nutrition focus beyond traditional treatment and prevention programmes to include programmes like school meals, general food assistance, asset creation and pro-smallholder programmes to make them more nutrition-sensitive. National social protection programmes, implemented on a large scale and targeting the most vulnerable people, also represent an important opportunity for delivering nutrition- sensitive programming.

Prevention programmes are especially effective and critical when the nutritional status of a population is at risk of rapid deterioration, especially when there are livelihood losses, interrupted food supplies, and outbreaks of infectious disease. In these instances, the reduced food intake, coupled with an increase in morbidity, can result in a sharp increase in the prevalence of acute malnutrition in children. Stunting results from prolonged or repeated episodes of nutritional deficiencies (energy or micronutrients) starting at or before birth or can also be the effect of repeated infections or poor living conditions. This type of malnutrition is best addressed through preventive maternal and child nutrition and health programmes and requires long-term planning and multi-sectoral collaboration.
In situations where children's dietary intakes were inadequate prior to the crisis/shock (not uncommon) WFP can advocate to continue prevention programmes in parallel with agriculture and poverty reduction programmes aimed at improving the quality of local diets.

[9] Unlocking WFP's potential: Guidance for nutrition-sensitive programming'- March 2017. Version 1.0

Nutrition is both an outcome and a determinant of resilience. Good nutrition status before an emergency or lean season occurs will allow populations to endure periods of lower food and nutrition security and allow them to be more resilient to nutrition-related morbidity and mortality during an emergency or lean season. Nutrition should also be a major component of resilience programming by targeting in priority nutritional vulnerable groups.

Young children, pregnant and lactating women, adolescent girls and other household members at risk of malnutrition (e.g. HIV/ART and TB/DOTS clients and elderly) are the key target groups for nutrition interventions. The window of the first 1,000 days - from conception to a child's second birthday - including pregnant and lactating women, is the primary focus for programs to prevent malnutrition. In addition to the first 1,000 days, evidence is growing that shows adolescence is also a critical time for nutrition interventions. Good nutrition builds strong immune systems, increasing children's chances of survival and protecting them their whole lives.

It can be costly to include all children in prevention programming, and therefore children in food insecure or poor households should be the primary target (better off economic groups can be encouraged to access the required nutrients through the existing market).

Answers to these questions will require further analysis. When considering a national food security and nutrition strategy from the ICA perspective, the objective is to highlight nutrition issues in a broad way as WFP and its partners discuss other programme themes, and that strategies consider potential complementarities across programme approaches.

ICA and Gender Equality

This guidance describes how an ICA can support the integration of gender equality in programming, thereby enabling effective, efficient, equitable and empowering processes and transformative results. The WFP Gender Toolkit (in Arabic, English, French and Spanish) contains guidance on integrating gender into WFP's work.

Gender equality

Gender equality refers to the equal exercise by women and men, girls and boys, of rights, opportunities, resources and rewards. Equality does not mean that women and men, girls and boys, are the same; but that their exercise of rights, opportunities and life chances are not governed, or limited, by whether they were born female or male.

For WFP, promoting gender equality means (i) assigning equal value to women and men (& girls and boys), and (ii) addressing their particular needs, interests, vulnerabilities and capacities, to realize food security and nutrition for all persons.

Gender roles, relationships and responsibilities directly influence experiences of food in/security and mal/nutrition, influencing who is food insecure, how and why. Accordingly, it is essential that we understand how gender is – and gender inequalities are – experienced by women, men, girls and boys in a given context. This means that we must integrate gender into WFP's analytical and planning tools and processes including ICAs.

ICA Gender Equality Lens

The ICA Gender Equality Lens map shows:

- The existence of gender inequalities in the country.
- Sub-national differences in the intensity of the mapped dimensions of gender equality across the country.
- Overlap between gender equality dimensions and food in/security and natural shocks.
- The need for further gender analyses – where additional quantitative data and qualitative information should inform programming.

The ICA Gender Equality Lens can inform decisions on planning and programming, and foster resiliency and sustained food security, by highlighting sub-national variations in gender inequalities that obstruct inclusive food security and nutrition. The Gender Equality Lens is relevant to all of WFP's work, including early warning, climate risk, emergency preparedness, DRR, nutrition, social protection, livelihoods and country capacity strengthening.

As gender is a crosscutting, multi-dimensional issue, a single ICA lens cannot capture the full spectrum of gender inequalities in a given country. Sub-national data availability also constrains choices about which gender equality dimensions to map. The goal of the ICA Gender Equality Lens is to start a conversation on how gender inequalities should influence programme design. The Gender Equality Lens cannot provide all the answers to questions that will come up, but it will provide enough information to develop preliminary strategies to refine programming themes, and acts a foundation for more in-depth analysis.

ICA Gender Equality Lens maps are strategic sources of information for informing, for example:

- National Zero Hunger Strategic Reviews
- Development and monitoring of Country Strategic Plans
- Design of specific programmatic interventions, such as relating to social protection, livelihoods and climate resilience
- Review and strengthening of existing programmes

Interpreting the ICA Gender Equality Lens map

The following are key questions to ask when interpreting an ICA Gender Equality Lens map.

1. What are the correlations between the chosen gender equality indicators and (a) food security, (b) natural shocks, and (c) the other ICA lenses? For example, in the areas of high food insecurity, is a particular gender inequality dimension also high? Which gender equality indicators correlate with food security?
2. Whom do the gender inequalities affect, and in which ways? Which women, men, girls and/or boys? What are the implications for beneficiary targeting?
3. Does WFP programming need to address gender inequalities to ensure optimal food security and nutrition outcomes? If not, why not? If yes, what further information should inform decisions?
4. Based on the available indicators, how can the programming themes at the centre of ICA analysis – safety nets, DRR, early warning and emergency preparedness – adapt to advance gender equality? For example, how can a safety net programme include measures that will help to improve low rates of female school completion? Some potential examples include the following.
    a) Where gender gaps in land ownership and agricultural employment correlate with food insecurity, an outcome looking at strengthening the resilience of smallholder farmers or building community assets should include empowering women.
    b) Correlations between high rates of child marriage, girls being out-of-school and food insecurity could suggest school meals programmes that target adolescent girls.
    c) In regions that experience frequent natural shocks and have relatively high rates of violence, activities addressing disaster risk reduction and climate change adaptation may consider provision of SAFE stoves (which reduces women's and girls' exposure to violence when gathering fuel) and ensuring access to information.
    d) Positive correlations between gender inequalities – such as those relating to violence, restrictions to mobility and access to information – and natural shock risk highlight the need for gender-responsive early warning and emergency preparedness initiatives.
    e) Where high malnutrition rates correlate with high gender inequality, a programme may seek to involve men in nutrition and gender equality sensitisation activities.

An ICA Gender Equality Lens map can also highlight the need for stronger data collection and deeper analysis, and is useful as an advocacy tool for these purposes. By showing the mapping that is possible with the data available, and how this can influence programming decisions, it is possible to make the case that other gender equality indicators should be collected on a regular basis. At the same time, a map cannot reveal (a) all issues affecting women, men, girls and boys; (b) why the gender inequalities exist, (c) how the gender inequalities relate to food insecurity; and (d) the most effective strategies for reducing gender inequalities and food insecurity. Accordingly, ICA Gender Equality Lens maps help identify in which geographic and thematic areas participatory gender analyses – whether standalone or integrated into other assessments – will be needed to adequately inform planning and programming.

ICA and Climate Risk Analysis

Climate risk analyses[10]

Climate variability or climate change? Climate risk analyses look at the impact of climate variability (changes in weather patterns) on specific variables today and in the recent past (typically over the past 30 years) while climate change analyses try to estimate future impact on those same variables using climate change projections. This guidance, and the ICA, are concerned with climate variability and consider current and historical data.

Climate variability and food security analyses aim to identify how, and to what extent, climate variability affects food security, livelihoods and nutrition for women, men girls and boys. They identify past and current climate trends, and geographic patterns of vulnerability. They understand how previous climate shocks and stressors align with trends in food security outcomes and specify the extent to which different sources of food, income and expenditure are sensitive to climate variables, for different wealth groups in different livelihood zones, for women and men differently.

Climate risk analyses can help guide adaptation planning and programme design for a wide range of stakeholders by helping target priority areas and persons particularly vulnerable to past and current climate risks and by helping identify the most appropriate types of interventions. They can also provide hard evidence to advocate for climate financing.

The first stage of a climate risk analysis focuses on defining the purpose of the study, identifying data requirements and availability, defining the scale of the analysis, and preparing the data. The second stage comprises the analysis itself, and consists of four components: a climate vulnerability analysis, a baseline vulnerability assessment, and a long-term historical analysis, followed by a workshop with partners to validate the results of these three.

ICA and climate risk analysis complementarities

The ICA presents a broad statement of context but also highlights opportunities for additional analyses of climatic and non-climatic factors affecting food security. The ICA method of historical trend analysis for natural shocks and the analysis method for climate vulnerability align fully. The analytical methods for the baseline assessment and the long-term analysis components of a climate variability analysis differ from those used by the ICA. The complementarities of both approaches are described below.

Complementarities in design

The climate vulnerability analysis component identifies areas that are particularly vulnerable to climate risks, in order to help identify priority intervention areas. It analyses historical climatological data (e.g. rainfall trends over time, including variability within and between years, dry spells, poor growing seasons, etc.), and identifies areas where patterns overlap. Specific climatic indicators are chosen according to national contexts in consultation with partners.

The ICA exercise covers much of the groundwork required by a climate vulnerability analysis, as it prepares data on food security (considering, among others, FSMS, CFSVA, FEWSNet data etc.), natural shocks and land degradation (see the Guidance Note on *ICA Data Requirements* for more detailed information). If additional thematic analyses are carried out as an ICA+ these may also prepare data of relevance to climate risk analysis (e.g., market assessments, living standard measurement surveys, gender analyses, household expenditure and budget surveys, agricultural censuses, etc.).

Complementarities in practice

Completion of an ICA in any given country office will rely on a combination of skills, roles and responsibilities many of which would be shared by a climate risk analysis exercise. In addition, an ICA and a climate risk analysis exercise will need to gather, prepare and analyse datasets on the same natural shocks and hazards. It is therefore important to ensure the lengthy processes related to data gathering, preparation and analysis benefit both. Country Offices undertaking an ICA or a climate risk analysis should:

- Document the processes of identifying the natural shocks most relevant in the country and determining their definitions and indicators. This will allow a more efficient use and cross-referencing of data by both exercises;

[10] See "Climate Risk and Food Security Analysis – A Guidance Manual (Draft)" (OSZIR) for more information.

- Arrange for central storage and documentation of the data gathered, cleaned and prepared for the first exercise to facilitate access and use by the second one;
- Ensure the datasets are collected for the durations required by both exercises (e.g. 30 years), so that they are gathered accordingly at the outset. This is particularly important when data belongs to local ministries and/or institutions and obtaining access and permission for use can take time.

Complementarities in findings

When undertaking climate risk analyses, it is important to recognise that a number of non-climatic factors can also affect food security, and these factors influence interpreting findings. This will not only ensure a more nuanced understanding of the drivers of food security in the country or region, but will also help underline the relative importance of climate factors as compared to other drivers of food security.

Findings from these climate analyses can be overlaid onto the core ICA findings to reveal potential areas of programmatic interest and targeting (e.g., education, health, gender etc.). The results of a climate risk analysis can also be overlaid on the core ICA findings.

ICA or Climate analysis: Which one first?

In an ideal scenario, given the broad nature of the ICA, it would be best that the ICA be carried out before other thematic analyses so that it can provide a platform and context for overlaying subsequent thematic findings such as a Climate Analysis. However, in times of competing resources and priorities, completing both an ICA and a climate analysis may not always be possible. Country offices should therefore identify the key questions they need to explore, and how they want to position their programmes – i.e. in a context of multiple shocks including climate, or in a context driven by climate variability and change, as this will determine what their programmes will be building resilience too, etc. In countries where climate risks are only one of the many factors affecting food insecurity, it may be opportune to prioritize an ICA. In countries where climate risk is clearly the central factor of food insecurity, it may be opportune to carry out a climate analysis straight away.

7. How to do ICA Analysis (Core)

This section of the ICA Guidance Manual describes how each map in the ICA is constructed, and how to select and prepare data for each map. This will enable a CO to get data ready for GIS analysis internally, or by the RB or HQ as required. For detailed instructions on ICA GIS analysis, please consult the ICA GIS Training Manual.

ICA Data Requirements

Required Datasets

The following lists the essential datasets required to complete an ICA. The actual indicators and sources chosen will vary by country context and data availability; see the following sections for theme-specific guidance. Core components are necessary. Lenses and addition contextual information datasets are strongly encouraged, but lack of data for one or more item is not an obstacle to doing the ICA.

ICA Component	Dataset	Time Series
Core	National / Subnational Boundaries	Most recent
Core	Food Security	Last 5 years
Core	Floods*	Last 30 years or modelled risk
Core	Drought*	Last 30 years
Lens	Land Degradation	2001-2013 (HQ has globally, on file)
Lens	Landslide Risk	Modelled risk
Lens	Nutrition	Last 5 years
Lens	Gender	Most recent
Additional	Population	Most recent
Additional	Seasonality	Last 30 years for shocks, 5 years for food security
Additional	Livelihoods	Most recent

*This table lists floods and drought as standard because these are the shocks used most frequently, but the shocks included in an ICA may vary by country.

Critical Data Attributes

Data sets should:

- Cover the whole country at second level administrative region resolution (first level is possible in some cases, but not suggested)
- Be available for time series as required for each indicator
- Be recognised and accepted by partners, especially the government
- Ideally, be sex-disaggregated if related to populations

Selecting Appropriate National Shocks for the Country

It is important to identify the most relevant, recurring shocks for the core ICA analysis and associated ICA categorisation. These can include any combination of recurring droughts, floods or tropical cyclones (the most commonly used), or other climate related context specific shocks, e.g. landslides or mudslides if these have significant impact in the country. Select shocks based on their importance from a humanitarian perspective; consider factors such as the proportion of the population affected by single events and the scale of humanitarian response required in response to single events.

National vs. Global Datasets for Natural Shocks

The ICA should use nationally owned, government-approved data sets if such are available via – for example – bodies such as an NDMA, universities or other research institutions. If national data sets meeting the critical attributes noted above are not available, the alternative is to use global datasets. Global datasets can be accessed through HQ Emergency Preparedness and VAM; technical analysis sections on flood and drought, below, provide detail on sources.

Tabular and Shapefile/Raster Datasets for Natural Shocks

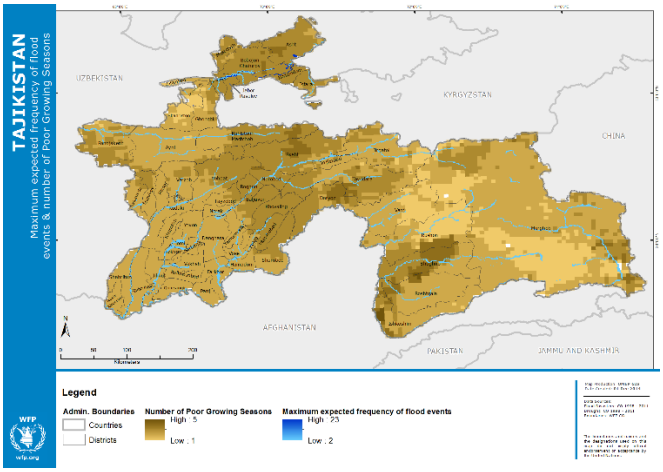
Tabular data

Tabular data must be recorded at district level and the District Identification Code from the Admin 2 shapefile must match the codes of the tabular data. The dataset must cover at least the the last 30 years with the number of events specified by year, and it may be in *.xls, *.csv, *.dbf or other similar formats. Example:

Admin0 Name	Admin1 Name	Admin2 Name	EMDAT Flood Events
DRC	Sud-Kivu	Bukavu	**2**
DRC	Sud-Kivu	Fizi	**0**
DRC	Sud-Kivu	Idjwi	**0**
DRC	Sud-Kivu	Kabare	**0**
DRC	Sud-Kivu	Kalehe	**1**
DRC	Sud-Kivu	Mwenga	**0**
DRC	Sud-Kivu	Shabunda	**0**
DRC	Sud-Kivu	Uvira	**1**

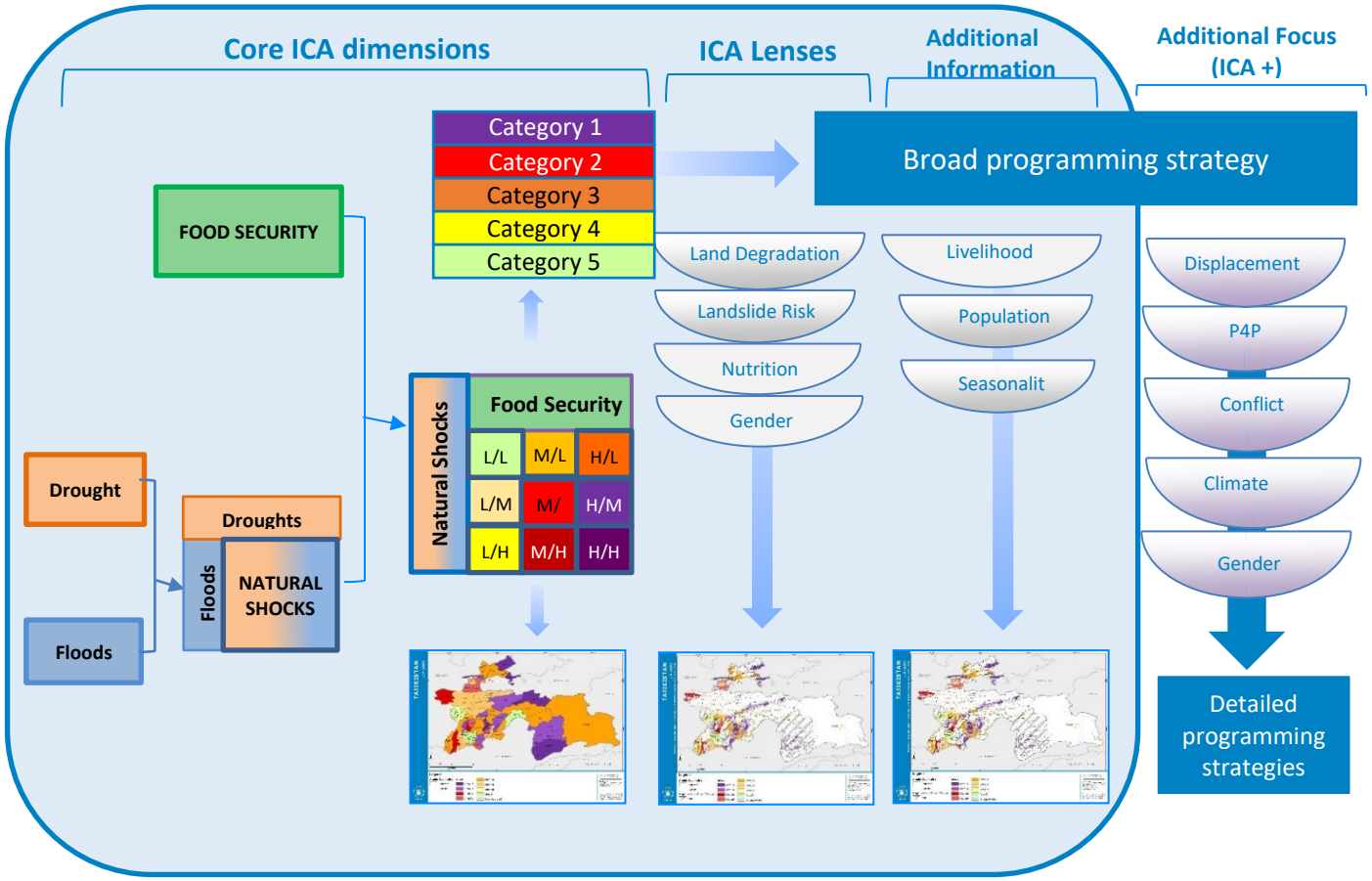
Raster data

GIS data may be available as shapefiles or raster files. District level shapefiles must have the same District Identification Code as the official Admin 2 shapefile. In case of raster data, one raster file with pixel values depicting the number of events in the last 5 years is required and another one for the past 30 years. Example:



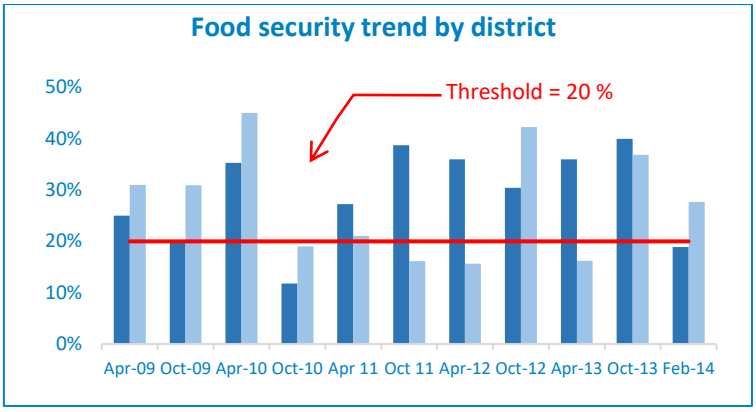
ICA Data Structure Overview

This diagram outlines how the ICA layers / data sets come together during the analysis process. Note the distinction between core ICA dimensions, lenses, and additional contextual information.



ICA Core: Food Security Analysis

ICA food security analysis assesses how the indicator values of each administrative unit compares to a benchmark throughout the period for which trend data is available. Each area is then reclassified using a simple 3-point scale (from 1 to 3) to indicate the frequency of recurrence of food insecurity above the benchmark: 1 = Low, 2 = Medium, 3 = High.



Inputs: Selecting food security data

Ideally, the ICA will use data from elaborated statements of food insecurity and vulnerability emerging from a government sanctioned, multilateral process. Absent such statements, which are strongly preferred, the ICA will make use of whatever simpler food security indicators are available (e.g., food consumption scores or groups), and if no food security data meeting time series requirements is available, poverty or socio-economic data.

- **Preferred indicators:** IPC, FEWSnet, Cadre Harmonise, or similar
  - IPC or FEWSnet (IPC Ver 2.0 scale): Keep original scale values
- **Alternative indicators**: CARI, Food consumption score (FCS), (Reduced) Coping Strategies Index (CSI). In the absence of food security data it is possible to use recent national poverty and/or socio-economic surveys
  - Food Consumption Group (FCG): Combine poor and borderline FCG or use only poor FCG
  - Consolidated Approach for Reporting Indicators of Food Security (CARI): Combine values for Moderately Food Insecure (CARI 3) and Severely Food Insecure (CARI 4)
- **Time series requirements:** At least five years, with seasonal differentiation within years, of the same dataset/indicator. This suggests at least 10-15 data points (5 years, with 2-3 data points per year). Seasonal data points should align across years. Do not combine different indicators / different datasets to make hybrid datasets meeting the time series requirements; instead, consider alternative indicators.
- **Resolution:** Second level administrative region (e.g. district)
- **Sources:** IPC, FEWSnet, Cadre Harmonise; WFP or national Food Security Monitoring System (FSMS), CFSVA, EFSA (if national in coverage); LSMS or other national household surveys.
- **Triangulation:** When possible, compare and contrast the findings of multiple datasets. This can stimulate discussion around causes for areas where different datasets show different findings.

Analysis

The ICA Food Security Analysis template, available at the footnoted link, provides the bases for these analyses.[11]

Using scale values

IPC and FEWSNet food insecurity phases use scale values of one through five, with five indicating the most severe conditions.

- **Threshold:** The ICA counts the number of times that each district has been rated as 3 or higher, i.e. the recurrence of food security over the threshold.
- **Three point scale**: The frequency of recurrence is converted into a percentage value based on the number of available data points for each district, and reclassified on the 3-point scale: 0-33% = 1 (Low), 34-66% = 2 (Medium), >66% = 3 (High). For example, if a district has been rated as IPC 3, 4 times out of 10 data points, this equals 40% and is reclassified in the ICA system as 2 (medium).

Using percentage values

Food consumption groups, CARI, and percentage of food insecure use percentage values, usually in terms of households surveyed.

[11] Add link

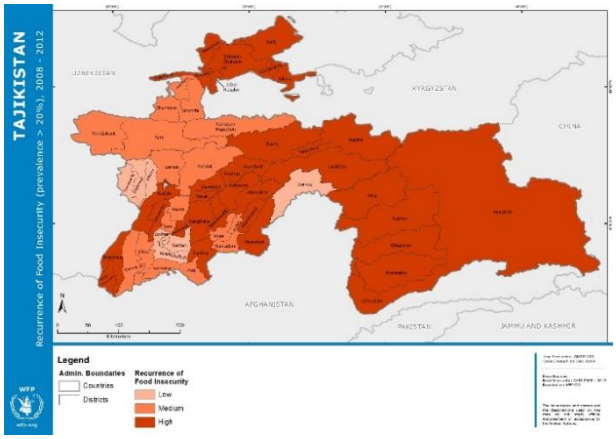
- **Threshold:** Percentage thresholds in the ICA are flexible and should be set according to the local context to allow the ICA to show some differentiation across a country, and be accepted as valid by partners. Frequently thresholds of between 20 and 30 per cent are used, but considering local context is crucial. One possibility is to use the national average level of food insecurity as the threshold. This enables the ICA to highlight areas that are above the national average, and thus support a strategy of focusing interventions on above-average areas as a means of pushing down the national average.
- **Three point scale**: The frequency of recurrence is converted into a percentage value based on the number of available data points for each district, and reclassified on the 3-point scale: 0-33% = 1 (Low), 34-66% = 2 (Medium), >66% = 3 (High). For example, if a district has been rated as IPC 3, 4 times out of 10 data points, this equals 40% and is reclassified in the ICA system as 2 (medium).

Triangulation of multiple data sources

Data triangulation, i.e. comparing and contrasting, is fundamental to the food security component of the ICA. If two food security indicators have been analysed 3-points scales for each can be cross tabulated to yield a final consolidated score if appropriate. The Excel Template facilitates this, so final scores can be mapped.

Outputs

The process above leads to a map such as the one shown below, with areas of low, medium and high recurrence of food insecurity above the defined threshold clearly differentiated.



ICA Core: Flood Analysis

Inputs: Selecting rapid-onset shock data

Longer-term data series (last 30 years) will help identify areas with differing longer-term likelihoods of exposure – useful for positioning DRR activities, for example – while considering events in the last five years will help highlight recent changes, identify populations that have been recently exposed to shocks and provide arguments for geographical targeting, prioritising and focusing on preparedness.

- **Indicators:** Number of flood events per year
- **Alternatives:** Absent frequency data, modelled probabilistic risk data is an alternative. Typically the ICA uses the UNISDR Global Assessment of Risk dataset from 2013 (GAR 2013) for this purpose.
- **Time series requirements:** At least 30 years, and the last five years. The 30-year time series informs DRR targeting, whilst the five-year set shows places that floods have recently affected, and that thus may require recovery efforts. Only the full 30-year data goes into the ICA categorisation; the five years is additional information, not part of the categorisation.
- **Resolution:** Minimum of second level administrative region for frequency data; higher resolution e.g. 1km is preferred for modelled risk
- **Sources:** Responsible National Ministries, National Risk Management Agencies, UNEP Global Risk Data Platform (www.preview.grid.unep.ch), EM-DAT International Disaster Database (www.emdat.be), DesINVENTAR Disaster Management Information System (www.desinventar.net), FEWS Net Data Portal (http://earlywarning.usgs.gov/fews). Rome HQ has the UNISDR GAR 2013 dataset on hand

Analysis

Using tabular data

When local tabular data are available and specify the number of events per year by district for the previous 30 years and the last five years, the final reclassification into low, medium and high levels of occurrence (using Jenks Natural Breaks) described below is based on the sum total of the events over the period in question.

Using raster data

Using Jenks Natural Breaks (available through ArcGIS), the range of values for both the surface area affected and the number of occurrences is broken down into three classes and reclassified as low, medium or high.

In cases where extreme values are present, more than three breaks can be used to identify how best to classify the values. The outlier values, which usually fall into a class alone, are then incorporated into the adjacent range and class in order to avoid skewing the classification. The table below shows an example of classifications of percentage of surface area at risk of flooding, and maximum frequency of flood events in 100 years.

Percentage of Surface Area at Risk of Flooding			
% Flood Surface	<=4%	5-9%	>=10%
Reclassification	Low (1)	Medium (2)	High (3)

Maximum Frequency of Flood Events within a 100 Year Period			
Max Flood Frequency	0-2	19	23
Reclassification	Low (1)	Medium (2)	High (3)

These values are cross tabulated to yield a final classification by district which can itself be reclassified into the 3-point scale (low, medium, high) and mapped:

Flood: Combined % and Area	Maximum Frequency of Flood Events within a 100 Year Period		
	Low (1)	Med. (2)	High (3)
Low (0-1)	2	3	4
Med. (2)	3	4	5
High (3)	4	5	6

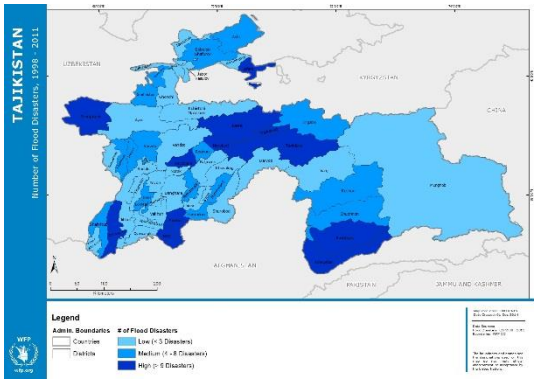
Score
Very low
Low
Moderate
High
Very high

Combined % and Area of Flood Risk Area with Maximum Frequency of Flood Events (within 100 year period) RECLASSIFIED			
Max Flood Frequency	2	3	4-6
Reclassification	Low (1)	Medium (2)	High (3)

Outputs

The results of the Analysis above – using tabular, raster, or multiple datasets – are mapped to produce a visual such as the one below, showing parts of the country that have been affected by – or have a likelihood exposure to – flooding (or another shock) with low, medium or high frequency relative to other parts of the country.

For tabular data on actual flood frequencies, a second map will show frequencies for the last five years; this is not possible with modelled data.



ICA Core: Drought Analysis

Inputs: Selecting drought data

In any country, it is important to identify whether drought is a relevant shock, the most relevant definition of drought and the most appropriate indicator. Longer-term data series (last 30 years) will help identify areas with differing longer-term likelihoods of exposure – useful for positioning DRR activities, for example – while considering events in the last five years will help highlight recent changes, identify populations that have been recently exposed to shocks and provide arguments for geographical targeting, prioritising and focusing on preparedness.

- **Indicators (slow-onset/drought):** satellite data on rainfall estimates (RFE)
- **Alternatives:** Normalised difference vegetation index (NDVI) can determine the number of poor growing seasons. The Water Requirement Satisfaction Index can show how rainfall matches up with water requirements for a specific crop.
    - **NOTE:** NDVI is most useful in relatively arid environments with limited vegetation; in places with steady, dense vegetation NDVI struggles to show variation, and RFE is more effective.
- **Time series requirements:** At least the past 30 years, and the last five. The 30-year time series informs DRR targeting, whilst the five-year set shows places that drought has recently affected, and that thus may require recovery efforts. Only the full 30-year data goes into the ICA categorisation; the five years is additional information, not part of the categorisation.
- **Resolution:** 5km for RFE; 1km for NDVI
- **Sources:** Responsible National Ministries, National Risk Management Agencies, UNEP Global Risk Data Platform (www.preview.grid.unep.ch), EM-DAT International Disaster Database (www.emdat.be), DesINVENTAR Disaster Management Information System (www.desinventar.net), FEWS Net Data Portal (http://earlywarning.usgs.gov/fews).

Analysis

Using tabular data

Tabular data that presents the number of drought events that by year and by district, the range of values can be reclassified as low, medium or high values using Jenks Natural Breaks (available in ArcGIS) as in the table below. This is done for A) the full 30-year time series, and B) the previous 5 years.

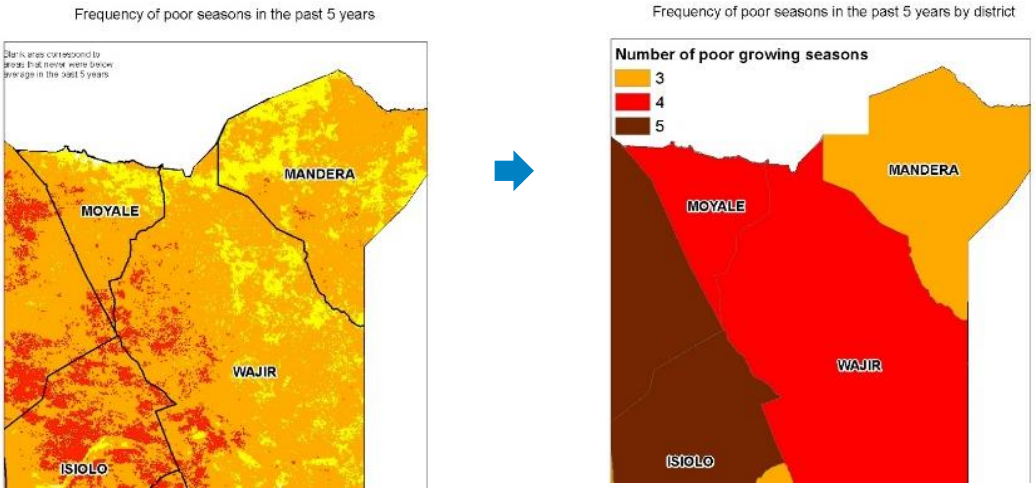
Number of drought events (1998 – 2011)			
	0 - 1	**2**	**3**
Reclassification	**Low**	**Medium**	**High**

Using raster datasets

Raster data can identify the "Number of Poor Growing Seasons (NPGS)" as a drought proxy if national data on drought is unavailable. This process uses remote-sensed datasets on the Rainfall Estimates data (RFE) or Normalized Difference Vegetation Index (NDVI) (depending on context):

1. A long-term average of rainfall or vegetation cover for each growing season is calculated (there may be more than one growing season in a given location).

2. The values for each of the growing seasons of the last 30 years and last five are compared against the long-term average.
3. This comparison produces the number of poor growing seasons (NPGS) during which values fall below 80% of the long-term average.
4. The basic assumption behind this comparison is that if the vegetation growth in a particular growing season is considerably below the longer-term average this would indicate water stress or drought conditions for vegetation growth in that area.
5. The results of the above are presented in raster format, where each pixel captures the number of times in the last 30 years that the vegetation or rainfall of the growing seasons were significantly below the long-term average. From this, figures are aggregated to yield the average or most prevalent number of poor growing seasons by district. The same is done for the last five years, as in the example below:



6. The range of values for the NPGS is broken down into three classes (low, medium and high) using Natural Breaks (Jenks):

Maximum Number of Poor Growing Seasons			
Drought risk	**0 - 3**	**4 – 7**	**8 – 16**
Reclassification	**Low**	**Medium**	**High**

Multiple datasets on drought can be cross-tabulated for a merged classification that reflects the impacts of all.

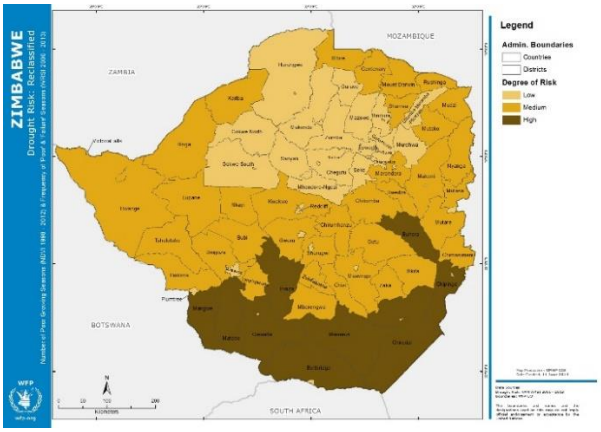
WRSI Drought	Frequency of poor growing seasons (1998 - 2013)		
	Low (1)	Med. (2)	High (3)
Low (0-1)	2	3	4
Med. (2)	3	4	5
High (3)	4	5	6

Score
Very low
Low
Moderate
High
Very high

Combined Drought Risk RECLASSIFIED			
Drought risk combined	**0 - 3**	**4**	**5-6**
Reclassification	**Low**	**Medium**	**High**

Outputs

The results of the Analysis above – using tabular, raster, or multiple datasets – are mapped to produce a visual such as the one below, showing parts of the country that have been affected by drought with low, medium or high frequency relative to other parts of the country. Maps are produced for the full 30 years, to show longer term risk and thus inform DRR efforts, and for the past 5 years to show places that drought has recently affected, and thus where recovery efforts may be appropriate.



ICA Core: Tropical Cyclone Analysis

Inputs: Selecting cyclone data

In case of countries with a well-known propensity to cyclone risk, historical trends of cyclones can help identify areas with longer-term likelihoods of exposure, useful for positioning DRR activities, while considering events in the last five years will allow to highlight recent changes, identify populations that have been recently exposed to cyclones and provide arguments for geographical targeting, prioritising and focusing on preparedness.

- **Indicators:** Number of cyclone events.
- **Alternatives:** In absence of consistent frequency data, global wind speed buffers can be used to assess how many times each unit of analysis was affected by the passing of a cyclone. Typically the ICA uses the UNISDR Global Assessment of Risk dataset from 2013 (GAR 2013) for this purpose.
- **Time series requirements:** At least 30 years, and the last five years.
- **Resolution:** Minimum of second level administrative region for frequency data; higher resolution e.g. 1km is preferred for modelled risk
- **Sources:** Responsible National Ministries, National Risk Management Agencies, UNEP Global Risk Data Platform (www.preview.grid.unep.ch), EM-DAT International Disaster Database (www.emdat.be), DesINVENTAR Disaster Management Information System (www.desinventar.net), FEWS Net Data Portal (http://earlywarning.usgs.gov/fews). Rome HQ has the UNISDR GAR 2013 dataset on hand

Calculations

Using tabular data

When local tabular data are available and specify the number of events per year by district for the previous 30 years, the final reclassification into low, medium and high levels of occurrence described below is based on the sum total of the events over the period in question and performed using the Jenks Natural Breaks algorithm.

Using raster data

For guidance on how to elaborate raster data using ArcGIS, please consult the "GIS Training Manual: Integrated Context Analysis"

Using Jenks Natural Breaks (available through ArcGIS), the range of values for the number of cyclone events occurrences is broken down into three classes and reclassified as low, medium or high.

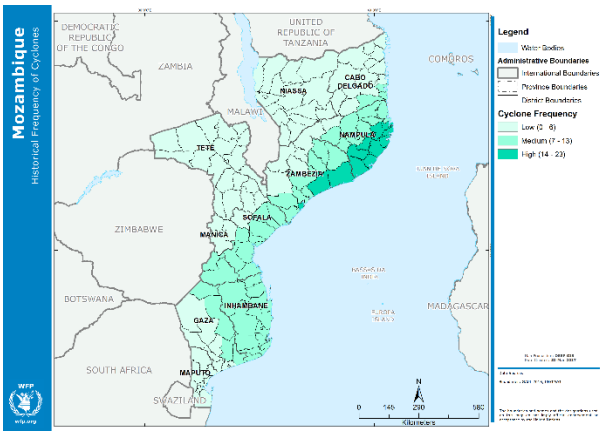
In cases where extreme values are present, more than three breaks can be used to identify how best to classify the values. The outlier values, which usually fall into a class alone, are then incorporated into the adjacent range and class in order to avoid skewing the classification. The table below shows an example of classifications of historical occurrences of cyclone events in 70 years (1930-2000).

These values are cross tabulated to yield a final classification by district which can itself be reclassified into the 3-point scale (low, medium, high) and mapped:

Overall frequency of cyclone events			
Cyclone occurrences	0 – 6 events	7 – 13 events	14 – 23 events
ICA Reclassification	Low (1)	Medium (2)	High (3)

Outputs

The results of the calculations above – using tabular, raster, or multiple datasets – are mapped to produce a visual such as the one below, showing parts of the country that have been affected by – have a likelihood exposure to – cyclones with low, medium or high frequency relative to other parts of the country.



Combining Core ICA Datasets to Make ICA Areas and Categories

This section explains the logic and key sequences of combining the core ICA dimensions to create ICA Area and Category maps, and overlaying lenses.

Combining and reclassifying natural shocks

ICA natural shocks analysis calculates the historical frequency of events over the past 30 years (or to modelled risk), and scores districts using the three-point scale to reflect low, medium or high frequency (or risk). The shock analysis provides one score per shock. A final score that reflects exposure to all shocks is created by cross tabulating the values from each separate analysis.

Two natural shocks

In an ICA with two core shocks, (e.g. floods and landslides) a simple two-dimensional cross tabulation yields a single consolidated classification.

Floods + **Drought**

Flood Reclassification			
Max Flood Frequency	2	3	4-6
Reclassification	Low (1)	Medium (2)	High (3)

Drought Reclassification			
Droughts	0 - 1	2	3
Reclassification	Low (1)	Medium (2)	High (3)

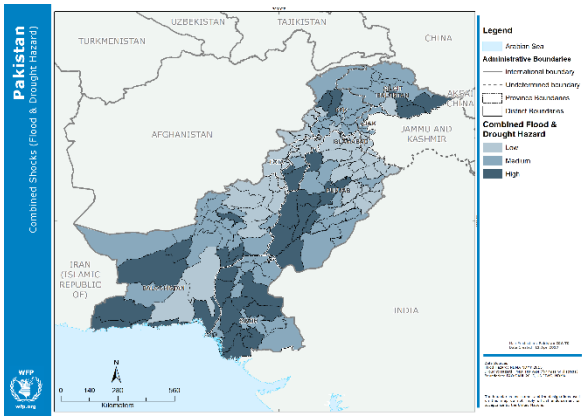
↓

		Drought		
		LOW (1)	MEDIUM (2)	HIGH (3)
Flood	LOW (1)	**2**	**3**	**4**
	MEDIUM (2)	**3**	**4**	**5**
	HIGH (3)	**4**	**5**	**6**

↓

Combined Shock Risk RECLASSIFIED

Flood & Drought Risk	2-3	4	5-6
Reclassification	Low	Medium	High



Three or more natural shocks

If the ICA combines three shocks, (e.g. floods, cyclones & drought), a similar process sums up the 3-point scores for each hazard to obtain a combined risk score ranging from 3 to 9.

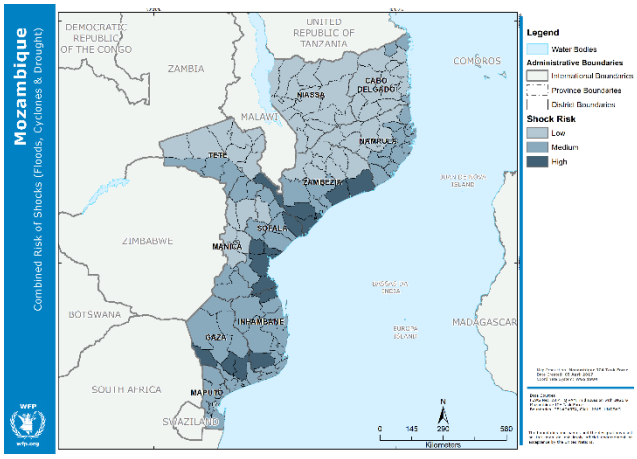
1. First, cross tabulate any two of the single shock results (e.g. floods and cyclones, but which ones are used does not matter)

		Cyclone		
Flood		LOW (1)	MEDIUM (2)	HIGH (3)
	LOW (1)	**2**	**3**	**4**
	MEDIUM (2)	**3**	**4**	**5**
	HIGH (3)	**4**	**5**	**6**

2. Second, cross tabulate the results of the first step with the results of the third single shock analyses to produce a final low/medium/high result

		Flood & Cyclone				
Drought		LOW/LOW (2)	LOW/MED (3)	LOW/HIGH or MED/MED (4)	MED/HIGH (5)	HIGH/HIGH (6)
	LOW (1)	**3**	**4**	**5**	**6**	**7**
	MEDIUM (2)	**4**	**5**	**6**	**7**	**8**
	HIGH (3)	**5**	**6**	**7**	**8**	**9**

Combined Shock Risk RECLASSIFIED			
Flood, Cyclone & Drought Risk	3 - 4	5 - 6	7 - 9
Reclassification	Low	Medium	High



In cases when the ICA core analysis comprises four shocks (noting that this is uncommon), a similar process as above applies, but step 1 is repeated. Thus, any two shocks are cross tabulated to produce a single interim value, then the same is done with the other two shocks, and then these two interim values are cross tabulated to produce a final result.

Combining food security and natural shocks to produce ICA Areas and Categories

1. For each district, the final reclassified low/medium/high score for natural hazards is cross tabulated with the low/medium/high score for recurrence of food insecurity, and thus assigned to one of the nine ICA Areas.

Exposure to Natural Shocks	Recurrence of Food Insecurity		
	LOW	MEDIUM	HIGH
LOW	Area 5	Area 3B	Area 3A
MEDIUM	Area 4 B	Area 2 B	Area 1 B
HIGH	Area 4 A	Area 2 A	Area 1 A

2. The ICA Areas condense into five ICA Categories, each with general programmatic recommendations.

Exposure to Natural Shocks	Recurrence of Food Insecurity		
	LOW	MEDIUM	HIGH
LOW	Area 5 CATEGORY 5	Area 3 B CATEGORY 3	Area 3 A
MEDIUM	Area 4 B CATEGORY 4	Area 2 B CATEGORY 2	Area 1 B CATEGORY 1
HIGH	Area 4 A	Area 2 A	Area 1 A

8. How to do ICA Analysis (Lenses)

ICA Lens: Land Degradation Analysis

The natural environment can magnify the impact of shocks. Shocks in fragile landscapes are likely to have greater negative impacts. Understanding the types of shocks and the levels of land degradation in which they occur can help prioritize where to focus on disaster risk reduction (DRR) that stabilizes landscapes and begins to build resilience, and preparedness activities.

Inputs: Selecting land degradation data

- **Indicators / Proxies**: land cover change, propensity to soil erosion

- **Alternatives**: land cover use, change in land cover in the past 10/15 years, desertification, tree cover loss, changes in NDVI, soil erosion, Land Degradation Assessment in Dry Lands (LADA) etc.[12]
- **Additional:** Watershed boundaries.
- **Time series requirements:** 2001 - 2013
- **Resolution:** 500m
- **Sources:** Responsible National Ministries, National Risk Management Agencies, UNEP Global Risk Data Platform (www.preview.grid.unep.ch), Land Cover USGS (http://landcover.usgs.gov/globallandcover.php) and http://due.esrin.esa.int/globcover/ and Global Assessment for Human Induced Soil degradation (GLASOD) http://www.isric.org/projects/global-assessment-human-induced-soil-degradation-glasod

Country offices should try to gather data at the highest resolution possible at national level. When this is not possible, HQ VAM & OSE – through the RB – can provide the following analyses using global data sets:

- Land Cover Change Analysis
- Soil Erosion Propensity

Analysis

Land cover change

Land cover change analysis identifies and qualitatively classifies deterioration in vegetation, looking specifically at deforestation and shifts to barren land. The analysis, with a spatial resolution of 500m, compares each pixel's land cover status in 2001-2005 with its status in 2009 – 2013. Data comes from MODIS (NASA), which offers global coverage. The MODIS standard land cover classes are grouped and given a numerical "ecological value". The higher the number, the higher the ecological value.

MCD12Q1 Class	New Name	Eco Value
Evergreen broadleaf forest	Forest	6
Evergreen needleleaf forest		
Deciduous broadleaf forest		
Deciduous needleleaf forest		
Permanent wetlands	Wetland	6
Closed shrublands	Shrubland	5
Open shrublands		
Woody savannas		
Savannas	Grassland	4
Grasslands		
Croplands	Croplands	3
Cropland/Natural vegetation mosaic		
Urban and built-up	Urban and built-up	2
Barren or sparse vegetated	Barren or sparse vegetated	1
Water	Water	0
Snow and Ice	Snow and Ice	0

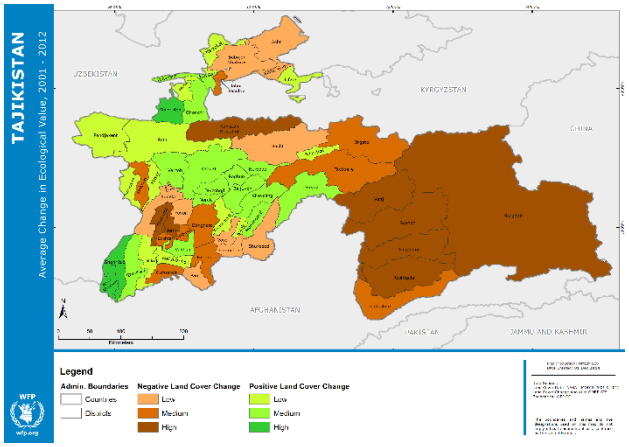
Changes over time are expressed as the difference between the initial (2001-2005) and final (2009-2013) land cover class values which can produce values from +3 to -3. Negative values indicate a deterioration in the ecological value of the land, i.e. a loss of vegetation and associated ecosystem services. Zero values indicate no change in land cover, and positive values indicate improvement in the ecological value.

The average change is calculated for each district (or other administrative area as defined by the analysis), taking into consideration the extent of both positive and negative change. The ranges of positive and negative values

[12] Context determines which indicator is most appropriate. This may vary by geographical area e.g. in the Sahel and Horn of Africa erosion and desertification may be more relevant than deforestation.

are broken down into three classes, respectively using Jenks Natural Breaks, keeping the same thresholds for both positive and negative change.

Extent of change in ecological class			
	0 – 0.1	**0.1 – 0.3**	**> 0.3**
Net positive change	LOW (1)	MEDIUM (2)	HIGH (3)
	0 – -0.1	**-0.1 – -0.3**	**< -0.3**
Net negative change	LOW (1)	MEDIUM (2)	HIGH (3)



Erosion propensity

ICA soil erosion propensity analysis uses a simplified version of the Universal Soil Loss Equation (RUSLE). RUSLE is widely recognised as a proxy or means of estimating erosion propensity. The original RUSLE definition is:

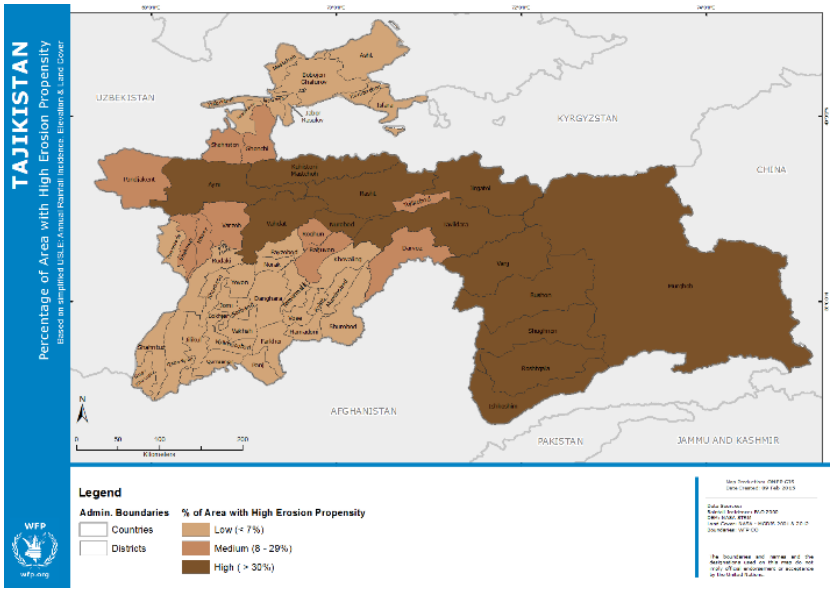
Erosion = R * K * Sl * C * P

Where "R" stands for rainfall, "K" stands for soil property in lithological terms, "Sl" stands for slope length, "C" stands for predominant land use and "P" indicates a protective factor, such as the presence of infrastructure apt to decrease soil erosion. In general, data on the "P" factor is hard to find so a simplified version – considering only potential soil loss and not actual loss - has been developed. It relies on the other four factors, elaborated based on the following key datasets:

- Rainfall incidence from WorldClim, 1960 - 1990 (~1 km resolution)
- Soil lithology calculated based on the FAO Digital Soil Map of the World v3.6, 2003
- Slope length calculated by SAGA-GIS using NASA SRTM digital elevation model (500m resolution)
- Land cover extracted from NASA MODIS MCD12Q1 product (~250m resolution).

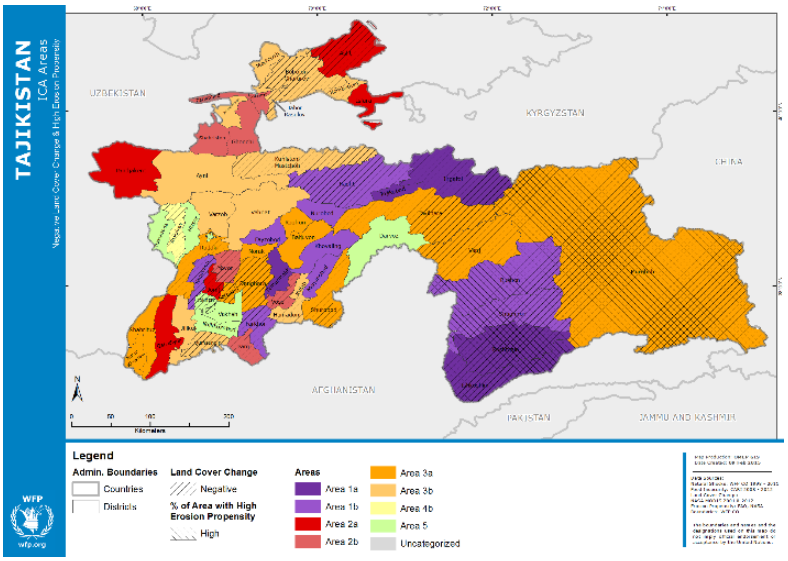
The result of their combination provides the estimated potential soil loss in tons/hectare (ha) per year. The percentage of territory in each district (or unit of analysis) that is subject to losing more than 5 tons/ha per year of soil is then calculated and classified using Jenks Natural Breaks.

Percent (%) of district territory with HIGH erosion propensity			
Erosion propensity	**< 7%**	**8% - 29%**	**> 30%**
ICA reclassification	LOW (1)	MEDIUM (2)	HIGH (3)



Outputs

In the ICA Report, land cover class change (\\\\) and erosion propensity (///) may be overlaid on the ICA area and category map (either separately or together) to highlight areas of convergence:



ICA Lens: Landslide Risk Analysis

If landslides are not a shock with consequences on the same scale as other shocks in the country, and thus should not be included in the ICA categorisation, they can be included as a lens to inform DRR programming, if relevant.

Inputs: Selecting landslide data

Longer-term data series (last 30 years) will help identify areas with differing longer-term likelihoods of exposure – useful for positioning DRR activities, for example – while considering events in the last five years will help highlight recent changes, identify populations that have been recently exposed to shocks and provide arguments for geographical targeting, prioritising and focusing on preparedness.

- **Indicators:** Number of landslide events
- **Alternatives:** Absent frequency data, modelled probabilistic risk data is an alternative. Typically the ICA uses the UNISDR Global Assessment of Risk dataset from 2013 (GAR 2103) for this purpose.
- **Time series requirements:** At least 30 years, and the last five years
- **Resolution:** Minimum of second level administrative region for frequency data; higher resolution e.g. 1km is preferred for modelled risk

- **Sources:** Responsible National Ministries, National Risk Management Agencies, UNEP Global Risk Data Platform (www.preview.grid.unep.ch), EM-DAT International Disaster Database (www.emdat.be), DesINVENTAR Disaster Management Information System (www.desinventar.net), FEWS Net Data Portal (http://earlywarning.usgs.gov/fews). Rome HQ has the UNISDR GAR 2013 dataset on hand

Analysis

Using tabular data

When local tabular data are available and specify the number of events per year by district for the previous 30 years, the final reclassification into low, medium and high levels of occurrence described below is based on the sum total of the events over the period in question and performed using the Jenks Natural Breaks algorithm.

Using raster data

Using Jenks Natural Breaks (available through ArcGIS), the range of values for both the surface area affected and the number of occurrences is broken down into three classes and reclassified as low, medium or high.

In cases where extreme values are present, more than three breaks can be used to identify how best to classify the values. The outlier values, which usually fall into a class alone, are then incorporated into the adjacent range and class in order to avoid skewing the classification. The table below shows an example of classifications of percentage of surface area at risk of landslide, and maximum frequency of landslide events in 100 years.

These values are cross tabulated to yield a final classification by district which can itself be reclassified into the 3-point scale (low, medium, high) and mapped:

Percentage of landslide affected area			
% of affected area	≤ 28%	29 - 63%	> 64%
ICA Reclassification	Low (1)	Medium (2)	High (3)

Maximum expected frequency of landslide events			
Maximum frequency	≤ 5 events	15 events	> 20 events
ICA Reclassification	Low (1)	Medium (2)	High (3)

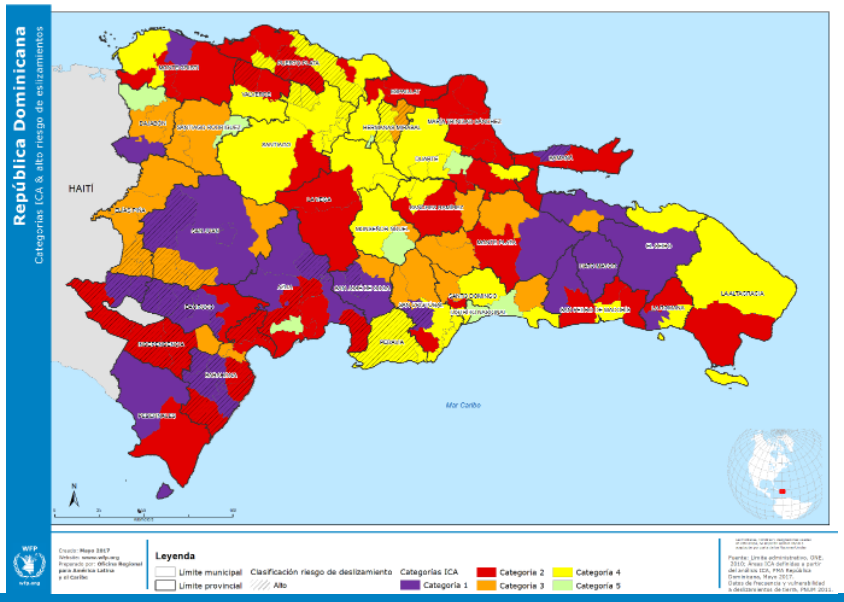
Landslide risk by second-level administrative unit			
% of affected area & maximum exp. frequency	Low (1)	Medium (2)	High (3)
Low (1)	Very Low	Low	Medium
Medium (2)	Low	Medium	High
High (3)	Medium	High	Very High

Landslide Risk			
ICA Reclassification	**Low (1)**	**Medium (2)**	**High (3)**
Landslide risk (% affected area x max. frequency)	**2**	**3**	**4 a 6**

Finally, a crosshatch on top of the ICA Categories will be used to represent the administrative areas showing the highest exposure to landslide risk.

Outputs

The results of the Analysis above – using tabular, raster, or multiple datasets – are mapped to produce a visual such as the one below, showing parts of the country that have been affected by – or have a likelihood exposure to – high landslide risk.



ICA Lens: Nutrition Analysis

Inputs: Selecting nutrition data

Although nutrition is not part of the ICA categorization, a nutrition lens can provide a primary overview of where nutrition programming can complement or integrate with other strategic themes, or be a primary objective.

The absence of a consistent global data repository of nutrition data or modelled nutrition hazard dataset means that an ICA lens should consider only the most recent nutritional status within a country and overlay it on top of the ICA Categories.

- **Indicators:** Prevalence of stunting, prevalence of wasting, prevalence of anaemia among women of reproductive age and/or children under five based on haemoglobin (iron deficiency).
- **Alternatives:** Women of childbearing age with BMI under 18, Mid-upper arm circumference (MUAC), nutritional oedema etc.
- **Time series requirements:** The most recent nutrition assessment available.
- **Resolution:** Second level administrative region preferred; minimum of first level administrative region.
- **Sources:** WFP Baseline data, Responsible National Ministries, partners, Multiple Indicators Cluster Survey (MICS, http://mics.unicef.org/surveys), Standardized Monitoring and Assessment of Relief and Transitions reports (SMART, http://smartmethodology.org/about-smart/), Demographic and Health Surveys (DHS,, Standardised Expanded Nutrition Survey (SENS, http://sens.unhcr.org/), Nutrition Landscape Information System (http://www.who.int/nutrition/nlis/en/), Vitamin and Mineral Nutrition Information System (http://www.who.int/vmnis/en/).

Analysis

A Country Office must decide which anthropometric indicator best describes nutritional status within the country. Because local tabular data containing the percentages of children under five years affected by the chosen indicator is usually available, it is possible to proceed with the reclassification into low, medium, high and very high described below using the thresholds suggested by the World Health Organization (WHO).

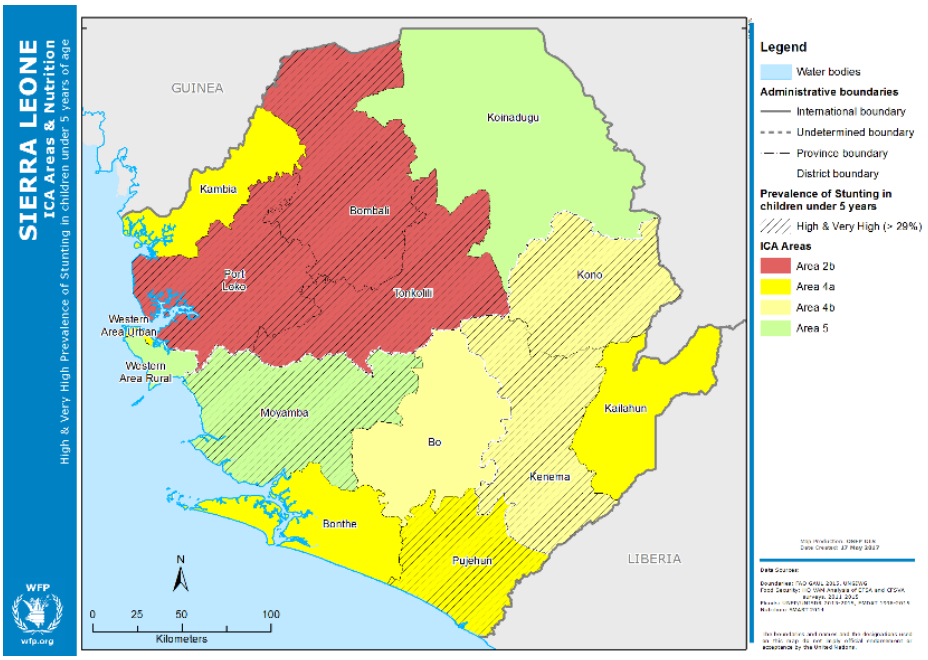
Indicator	Severity of malnutrition by prevalence (%)			
	Low	Medium	High	Very High
Stunting	< 20%	20 – 29%	30 – 39%	≥ 40%
Anaemia	< 5%	5 – 19%	20 – 39.9%	≥ 40%
Wasting	< 5%	5 – 9%	10 – 14%	≥ 15%

The ICA regularly includes analysis of intra-annual and inter-annual variability of seasonal food security and exposure to natural hazards. In some contexts, there may also be seasonal variation in wasting. The ICA provides

a potential platform for additional seasonal analysis of wasting in contexts where there are significant intra-annual and inter-annual seasonal trends in prevalence of acute malnutrition.

Outputs

Mapping the results of the calculations above produces an output such as the one below, showing parts of the country recently affected by high nutritional hazard. A crosshatch on top of the ICA Categories represents the administrative areas showing both high and very high nutritional hazard.



ICA Lens: Gender Equality Analysis

Gender roles, relationships and responsibilities are directly linked to experiences of food in/security. In an ICA, the Gender Equality Lens will produce information that is critical to adequately informing decisions, planning, programme design and partnerships that foster resiliency and sustained food security; including across the ICA thematic areas of social protection and safety nets, disaster risk reduction, early warning, climate risk and emergency preparedness.

Gender equality is not directly observable. The existence – or not – of gender equality is determined through measurement of observable phenomena. Gender equality is multi-dimensional and present in different domains e.g., the individual and family, economic, social and political life. For the ICA Gender Equality Lens, this means selecting three or four dimensions out of the six below[13] to create an adequate picture of the situation for women, men, girls and boys in the country of focus:

Inputs: Selecting gender data

- **Indicators / Proxies**: 1 indicator from each of 3 or 4 of the following dimensions:
  1. Education and training:
     a. proportion of individuals who own a mobile telephone (by sex)
     b. attendance / completion / enrolment from secondary / primary education (by sex)
     c. adult literacy rate (by sex)

[13] These six gender equality dimensions align with key global frameworks and indicators, including:
- The 2030 Agenda for Sustainable Development (SDG 5) http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E
- The Beijing Declaration and Platform for Action http://www.un.org/womenwatch/daw/beijing/pdf/BDPfA%20E.pdf
- The UN Minimum Set of Gender Indicators https://genderstats.un.org/#/home
- Global gender equality indices: Gender Equity Index (GEI); Gender Development Index (GDI); Gender Inequality Index (GII); Social Institutions and Gender Index (SIGI); World Economic Forum Global Gender Gap

2. Work (paid and unpaid)
    a. formal employment / labour force participation rate (by sex)
    b. informal / vulnerable / temporary employment (by sex)
    c. (proportion of) time spent on unpaid domestic and care work (by sex)
3. Economic resources
    a. proportion of adult population owning land (by sex)
    b. proportion of population with access to bank account / financial institution / financial services / credit
    c. proportion of population living below the national poverty line (by sex)
4. Health
    a. proportion of women of reproductive age (aged 15-49 years) using a modern contraceptive method
5. Violence
    a. proportion of women and girls subjected to physical, sexual or psychological violence by a current or former intimate partner
    b. proportion of women and girls subjected to physical and/or sexual violence
    c. proportion of women and girls married or in a union before age 15 and before age 18
6. Power (decision-making):
    a. proportion of seats held by women in local governments / institutions / decision-making bodies
    b. proportion of decision-making entity – committees, boards, teams etc. – members who are women
    c. proportion of women who make decisions by themselves (or jointly) on their own healthcare, making major household purchases, visits to her family/relatives (all three / none of the three)

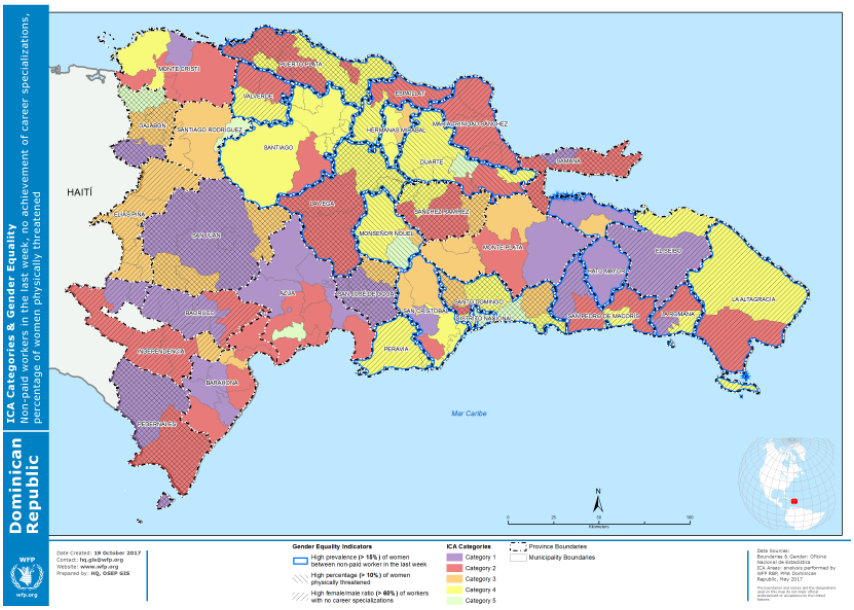
- **Time series requirements:** Most recent
- **Resolution:** Second level administrative region preferred; first level if needed
- **Sources:** WFP (e.g. CRF C.3.1-C.3.3), National Statistical Office; statistical offices of specific ministries (education, employment, health etc.); Demographic and Health Surveys – https://dhsprogram.com/; Multiple Indicator Cluster Surveys – http://mics.unicef.org/; gender analyses (surveys) of other UN entities and NGOs; United Nations Statistics Division (UNSD) Minimum Set of Gender Indicators and Minimum Set of VAW Indicators datasets; SDG Indicators Global Database; FAO Gender and Land Rights Database.

Analysis

A coding system must be selected and applied. One option is to determine 'high', 'medium' and 'low' levels of inequality – the value of the gap between women and men – for each selected gender equality indicators. For example, 'high', 'medium' and 'low' inequality in representation in parliament or in labour force participation or in access to reproductive health services. For a given country, the subnational areas can then be marked – with colours or lines – as 'high', 'medium' or 'low'; with the potential of overlaying the selected gender equality indicators. In other instances, where measuring the difference between women and men is not applicable (such as in relation to intimate partner violence or reproductive health), it may be preferable to map absolute values.

Outputs

This example of a Gender Equality Lens shows three indicators on the ICA Categories: Percentage of women in non-paid work, percentage of women threatened, and percentage of women without career specialisation.



Overlaying ICA Lenses/Contextual Information on ICA Areas and Categories

The ICA concept uses a core foundation (ICA Areas and Categories) on top of which other data layers can be overlaid as needed. Datasets on coverage or spread indicators (e.g., land degradation, malnutrition, enrolment rates, etc.) are overlaid as complete layers using hatching or crossing (///, \\\, XXX) so that the underlying ICA Areas remain visible. When both negative change in land cover class and soil erosion propensity have been calculated for the country, they may be left separate and mapped with contrasting hatches (/// and \\\). This will highlight areas of overlap and non-overlap, which may be relevant for different types of interventions.

9. How to do ICA Analysis (Additional Information)

ICA Additional Information: Population Figures

Inputs: Selecting population data

Population data can help estimate the number of food insecure people who may need assistance in the long-term and during particularly bad seasons or years.

- **Preferred Indicators:** Most recent sex- and age-disaggregated population figures by administrative level identified as the basis of the ICA exercise (typically second level administrative region).
- **Alternatives:** Population density figures, Human settlements, Refugee/Returnees/IDP camp locations and figures, etc.
- **Time series requirements:** None; most recent only
- **Resolution:** Second level administrative region; 1km if Landscan
- **Source:** Most recent national census data, population data collected at the administrative level of interest by other more recent exercises, etc., Landscan if census is not available.

Analysis

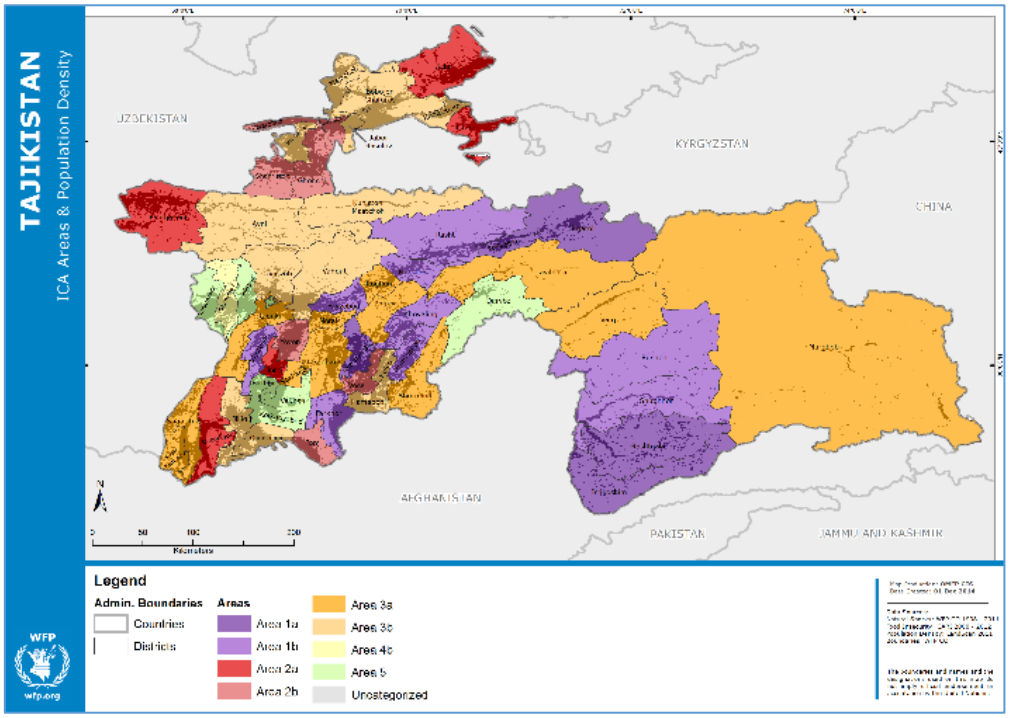
The ICA presents three population estimates:

- **Long-term planning:** The average number of people estimated to be food insecure over the last five years. This reflects the number of people who have been either (a) consistently food insecure or (b) have experienced food insecurity at some point because of a specific shock or event.
- **Most vulnerable:** The average of the two lowest figures recorded over the recall period. This estimates the core group of people who have been consistently food insecure irrespective of whether there were good harvests or not (or no shocks) in the past five years.
- **Possible additional food insecure:** The difference between the averages of the two highest figures recorded over the recall period and the overall average (long-term planning figure above). This figure estimates the number of additional people at risk of falling into food insecurity in case of a shock. This

estimate comes with a significant caveat: it only considers recent possible shock events, and thus likely excludes potential major shocks (e.g. a hundred-year flood) because these are unlikely to have occurred in the preceding five years. Thus, this estimate is better understood as a rough number of people frequently affected by (probably relatively small-scale) shocks, rather than a worst-case scenario. This should only support planning, and should never replace actual assessed impacts for developing a response.

Outputs

The results from the process above produce a map such as that shown below, combining population densities and ICA Areas. Instructions are available in the ICA GIS Analysis Training Manual.



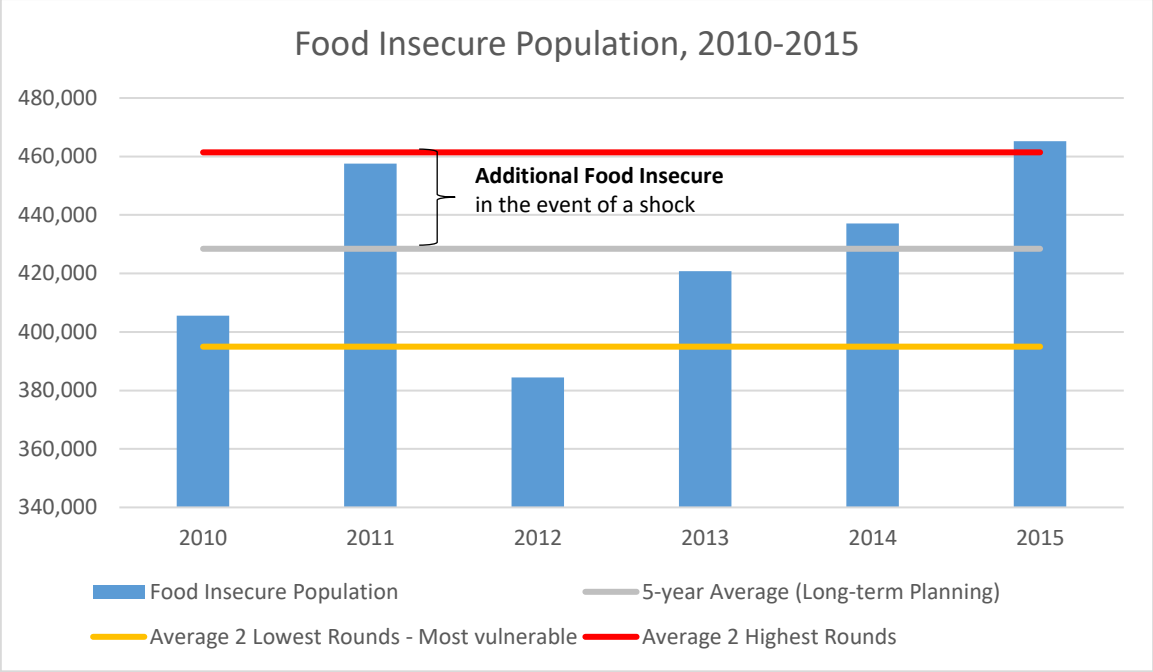
Population figures from the Excel template described above fit into the ICA Report as follows:

1. Population figures fit in the final category tables (1 table per Category, in the Programme Recommendations section) in the ICA Report.
2. The figures also fit in to the tables in Population Figures part of the Technical Findings section of the ICA Report, as shown below.

[indicator] from [year] to [year] as per [source]				
[Year 1]	**[Year 2]**	**[Year 3]**	**[Year 4]**	**[Year 5]**
[figure]	**[figure]**	**[figure]**	**[figure]**	**[figure]**

Long-term planning: average number of food insecure people in the last **[reference period]**	**figure**
Most vulnerable: estimated core number of food insecure people	**figure**
Preparedness planning: additional number of food insecure at risk in the event of a shock	**figure**

3. Copy and paste the graph (example below) from the Excel template into the ICA report.



ICA Additional Information: Seasonality of Food Insecurity

Inputs: Selecting seasonality of food insecurity data

Seasonality data for insecurity typically comes from the same source as data for the standard ICA food security analysis. When data is collected from the same locations at least twice a year, at the same times each year, analysis can identify patterns of seasonality. For example, FSMS data is often available for three or four rounds a year, while FEWSNet data is available quarterly.

Analysis

Group data from various food security rounds according to how the months in which they were collected align with the seasons in the seasonal calendar and/or local knowledge of the seasons in the country. Where seasons vary across different parts of the country, it may be appropriate to also aggregate data by region.

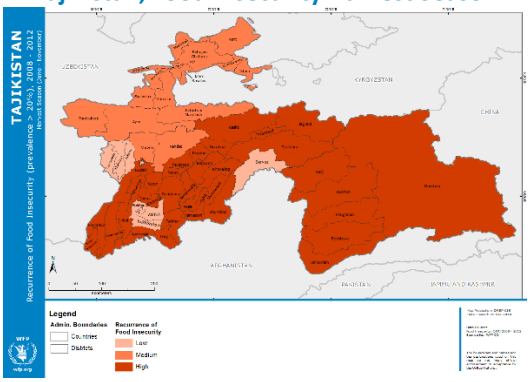
Carry out the food security analysis on each subset of data using the Excel ICA Food Security Analysis template (as done for the basic food security analysis). The last worksheet in the file facilitates consolidating the ICA scores for each season on a single sheet map each separately:

	Livelihood Zone	Population	Overall	Harvest	Lean
1	Eastern Pamir Plateau Livestock	16,893	3	2	3
2	Western Pamir Valley Migratory Work Zone	144,637	3	2	3
3	Western Pamir Irrigated Agriculture Zone	39,000	1	1	1
4	Rasht Valley Irrigated Potato Zone	373,662	3	3	3
5	Khatlon Mountain Agro-Pastoral Zone	193,583	3	3	3
6	Southen Khatlon Cotton, Vegetable & Wheat Zone	1,069,500	2	2	3
7	Khatlon Rainfed Wheat and Livestock Zone	541,191	3	3	3
8	Central and Eastern Tajikistan Agro-Industrial Zone	662,327	1	2	1
9	Eastern & Central Zeravshan Valley Agro-Pastoral Zone	666,923	2	2	2
10	Panjakent Rice, Fruit and Vegetable Zone	86,265	2	1	2
11	Ghonchi & Istaravshan Rainfed Cereal, Fruit and Vegetable Zone	204,844	2	2	2
12	North Sughd Agro-Indastrial Zone	958,625	2	2	2
13	Khatlon Agro-Industrial Peri-Urban	436,924	1	3	1

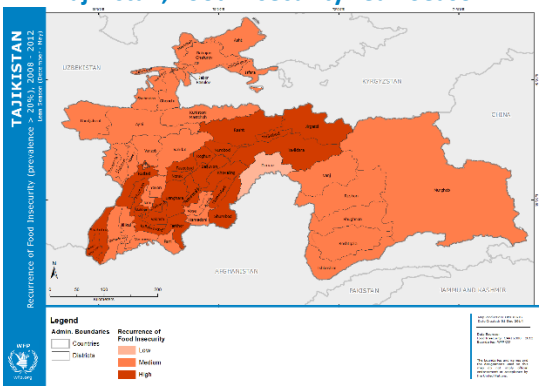
Outputs

If seasonality of food insecurity is calculated, the results underpin multiple, comparable maps that show the recurrence of food insecurity at different times of the year.

Tajikistan, Food Insecurity Harvest Season



Tajikistan, Food Insecurity Lean Season



ICA Additional Information: Variability of Rainfall / Vegetation across Years

The ICA analyses the variability of rainfall or vegetation across years to identify places where rainfall / vegetation is relatively unpredictable year to year. High variability can have significant impacts on livelihoods.

Inputs: Selecting data for the inter-annual variability of rainfall / vegetation

Inter-annual variability of rainfall or vegetation analysis uses the same data as the core ICA drought analysis.

Analysis

Data analysis is the same for NDVI and rainfall estimates. Values are plotted for various intervals (e.g. monthly) during the year, for a number of years. This results in a series of peaks and dips that reflect when vegetation / rainfall is scarce (dips/dry seasons) and abundant (peaks/wet seasons).

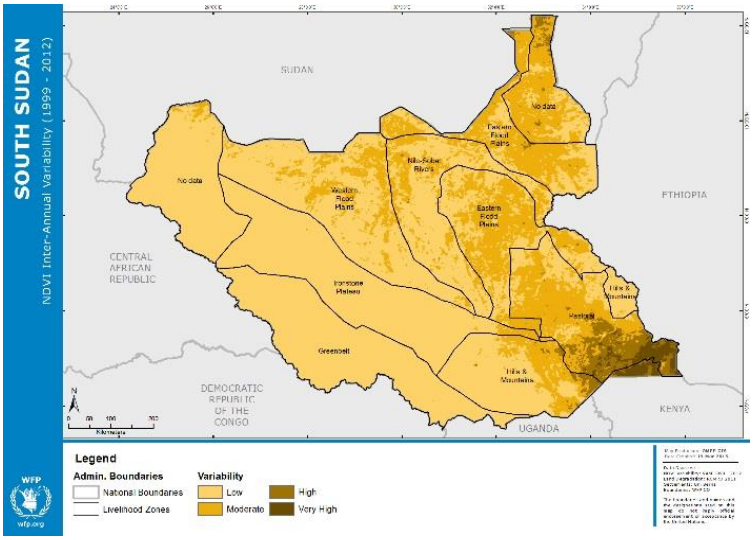
Variability refers to the amount of change between the peaks (and dips) across the years. If variability across years is low, the levels of scarce vegetation and abundant vegetation that can be expected in a given context at given times are relatively stable (or predictable). If variability is high, this would indicate less predictability or stability in the vegetation levels over time.

The actual calculation is standard deviation from the mean.

As with all ICA analyses, data on NDVI variability is reclassified along the three-point scale using Jenks Natural Breaks so that it can be mapped.

Outputs

Once mapped, understanding the implications of the seasonal variability is essential. In the map below for example, the south-eastern tip of South Sudan has experienced high variability across the years suggesting that people living in those areas will have been subject to unpredictable changes in their annual seasonal weather patterns, which may have considerable consequences for their livelihoods. The areas to the west of the country have seen little variability indicating more stable and predictable weather patterns and conditions.



ICA Additional Information: Livelihoods and Associated Overlays

Data on livelihood zones help contextualise findings as well as highlight possible areas for further investigation, for example through the SLP. In all cases, a solid understanding of livelihoods and the general degree to which each may be more or less sensitive to natural shocks and climate variability is important.

Inputs: Selecting livelihood data

- **Indicators:** Livelihood designations
- **Alternatives:** Landcover classes (can be useful in arid areas)
- **Time series requirements:** The most recent available.
- **Resolution:** Livelihood zonbes
- **Sources:** FEWSnet, Save the Children, other NGOs in some cases

Analysis

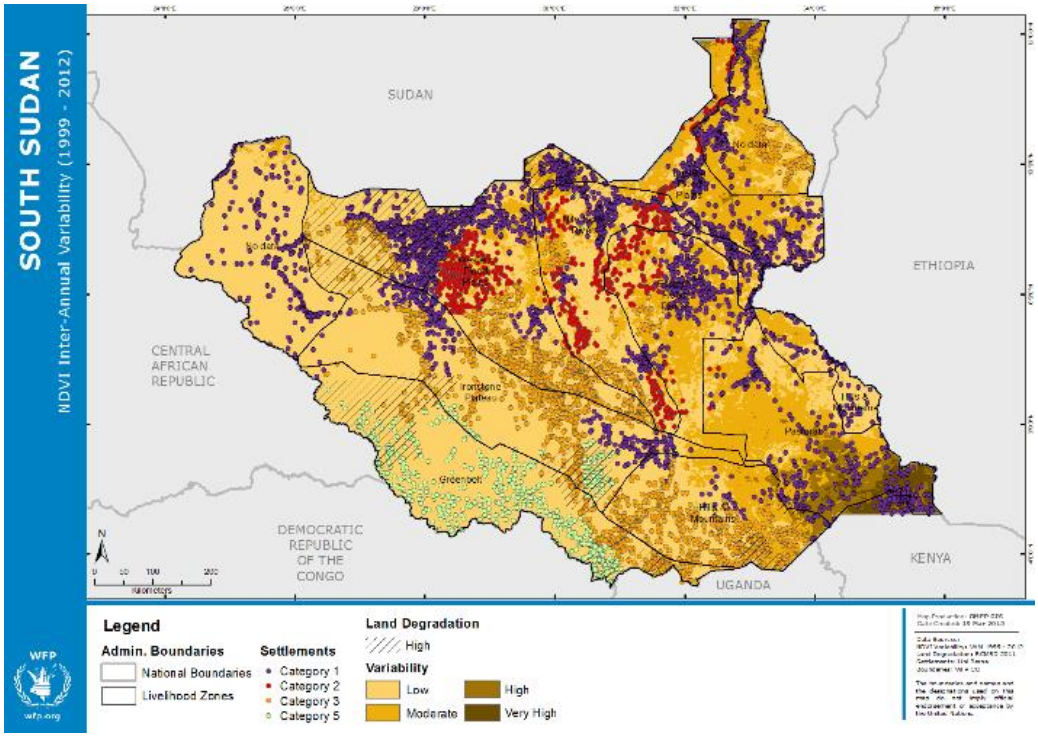
The ICA only considers the most prevalent livelihood by district. This is calculated by surface area in each district.

Outputs

Spatial livelihoods information is most useful when visually combined with datasets showing other factors that are relevant to livelihoods. The ICA includes a map that brings together information from a number of other analyses described in this guidance, along with livelihoods:

1. Livelihood zones
2. Inter-annual RFE/NDVI variability
3. Land degradation
4. Human settlements
5. ICA Areas (food security trends and likelihood of exposure to natural shocks

Although we cannot assume linear causality between any of these factors, the various combinations provide a foundation for discussion on how all factors interact.



10. GOING DEEPER: THE ICA+ CONCEPT

The standard ICA is a compilation and combination of the top-level results of a number of in-depth, subject-specific studies. This approach provides a broad understanding of how certain elements of the national context overlap.

The ICA+ concept allows programme designers to overlay multiple lenses related to a specific topic onto the foundation of the core ICA dimensions, and thus take a deeper view. Practically, this works as multiple version of the single lenses described in this document. One indicator (or even three on a single map, as is the case with the Gender Equality Lens) is a lens; multiple lenses on a subject, along with related programme conclusions, are an ICA+. It follows from this that it is possible to construct an ICA+ on nearly any topic that is useful from a programme design perspective. Using the ICA as a foundation for more detailed information enables all planning to happen in the same place and thus encourages coherence between programming themes.

Possible ICA+ topics include, but are not limited to conflict, climate change, seasonality, livelihoods, or displacement. For assistance in designing and implementing an ICA+, please contact the ICA team at Headquarters via the Regional Bureau VAM or Programme units.