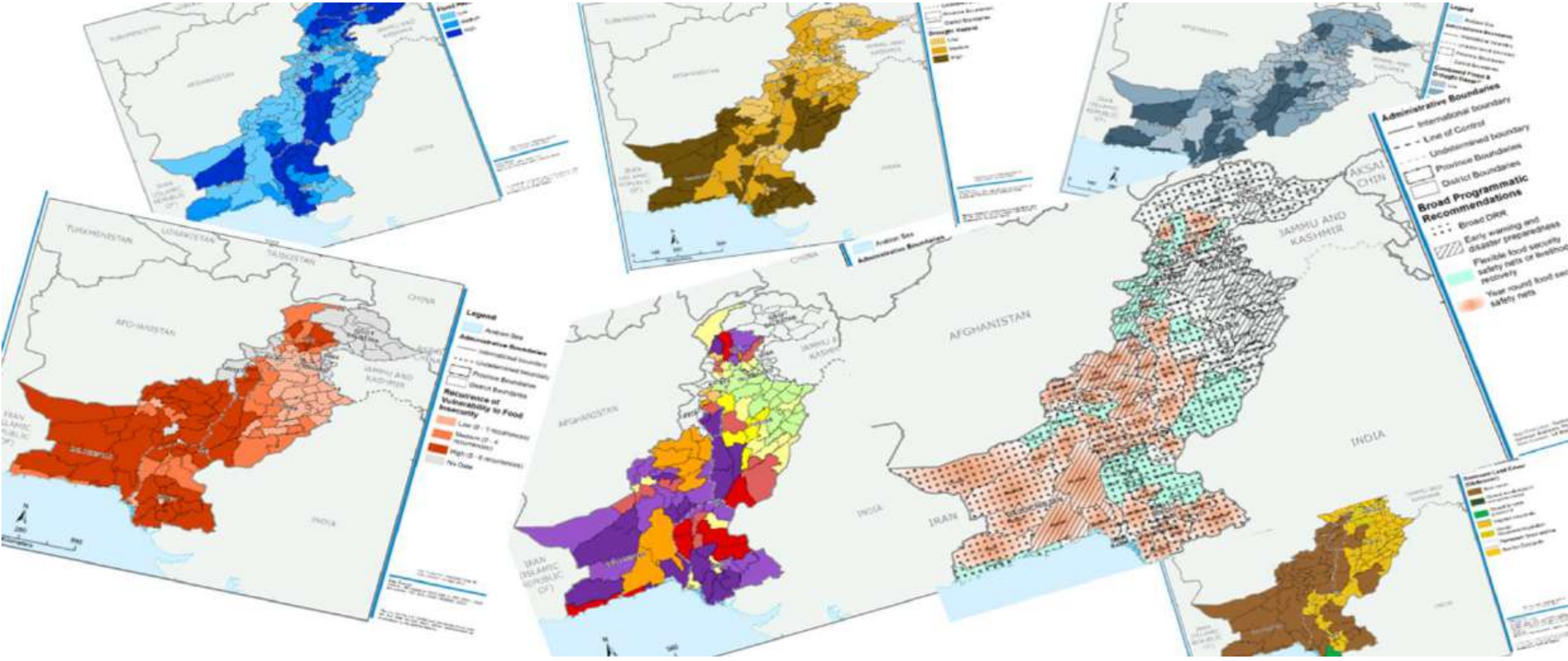

Integrated Context Analysis (ICA)

On Vulnerability to Food Insecurity and Natural Hazards

Pakistan, 2017

PAKISTAN National Disaster Management Authority NDMA

WFP World Food Programme wfp.org

Integrated Context Analysis (ICA)

On Vulnerability to Food Insecurity and Natural Hazards

Pakistan, 2017

National Disaster Management Authority (NDMA) is the lead federal agency to deal with whole spectrum of Disaster Management (DM) in Pakistan. It was raised in 2007 through National Disaster Management Ordinance and was finally provided parliamentary cover by an act of Parliament in 2010. It is the executive arm of the National Disaster Management Commission (NDMC), which was established under the Chairmanship of the Prime Minister of Pakistan, as an apex policy making body in the field of Disaster Management. NDMA aims to develop sustainable operational capacity and professional competence to coordinate emergency response of Federal Government in the event of a national level disaster.

United Nations World Food Programme (WFP) operations in Pakistan are aligned with the Government of Pakistan's priorities defined in Vision 2025. WFP is supporting the Government-led efforts to **improve food and nutrition security** among vulnerable communities affected by the law and order situation and the effects of recurring climatic events, in the most hazard-prone areas of the country. WFP is also working to **build resilience; address malnutrition**; create an enabling environment for women to achieve social and economic **equality** and facilitate the **voluntary return of the displaced.**

Disclaimer:

The designation employed and the presentations of material in this publication do not imply the official endorsement on the part of the World Food Programme (WFP) concerning the legal status of any country, territory, city or area of its frontiers or boundaries. All reasonable precautions have been taken to compile the data for this publication. However, the World Food Programme or any of its partners are not responsible for its accuracy.

ISBN: ---

We appreciate your feed-back

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List of Abbreviations

CBPP	Community-Based Participatory Planning
CSP	Country Strategic Plan
DEM	Digital Elevation Model
DMC	Disaster Management Cycle
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ESA	European Space Agency
FAO	Food & Agriculture Organization of the United Nations
GLOF	Glacial Lake Outburst Flood
MPI	Multi-Dimensional Poverty Index
NASA	National Aeronautics and Space Administration
NDMA	National Disaster Management Authority
OCHA	Office for the Coordination of Humanitarian Affairs
OSEP	Emergency Preparedness Branch, WFP
PBS	Pakistan Bureau of Statistics
PDMA	Provincial Disaster Management Authority
PMD	Pakistan Meteorological Department
PoU	Prevalence of Undernourishment
PSLM	Pakistan Social and Living Standards Measurement
SDG	Sustainable Development Goals
SLP	Seasonal Livelihood Programming
SPI	Standardized Precipitation Index
SUPARCO	Pakistan Space and Upper Atmosphere Research Commission
UNDP	United Nations Development Programme
VAM	Vulnerability Analysis & Mapping, WFP
3PA	Three-Pronged Approach for Resilience Programming

FOREWORD

Food is basic human need and essential for sustaining life under all circumstances. While ensuring appropriate nourishment remains a challenge in itself, it gets extremely demanding during natural disasters. This intricate relationship between prevalence of vulnerability to food insecurity and natural hazards is rightfully projected by integrated analysis of all correlated contexts. 'Integrated Context Analysis' therefore, is an ordinate, globally adopted and proven programmatic tool of immense value to the decision makers.

World Food Programme's endeavors in terms of introducing ICA in Pakistan and world over are commendable. The process was initiated in Pakistan in a logical, all-inclusive and structured manner in October 2016. National consultation with all stakeholders and relevant departments at federal and provincial levels was held. This joint meeting aimed at introducing the process and making it meaningful, indigenous and owned by all. Representatives unanimously approved implementation of ICA for Pakistan and recommended NDMA to act as lead agency.

World Food Programme and NDMA thereafter jointly adopted a logical and structured methodology. Two Committees were formed. Steering Committee comprised of representatives from all stakeholders including federal departments. While, Technical Committee included technical representation from all relevant departments.

The process commenced with identification of relevant data sets. Technical committee accordingly pursued the process at intricate level seeking international support from WFP HQ and FAO HQ both located at Rome. ICA Report comprises two parts, a Technical Report and a Programmatic Report. Findings in both parts were formulated and finalized after repeated consultations with the national and provincial stakeholders. All results at every stage were tested and verified with due ratification by joint sessions of both committees and all stakeholders including national and provincial.

Integrated Context Analysis is meaningful from multiple standpoints particularly for those associated with food security and natural disasters. Both long term and short term programmatic intervention are suggested in the report. NDMA is accordingly poised for endeavoring to foster resilience in identified areas in cooperation with all stakeholders and implementation partners.

It may be more pertinent to mention here that, Integrated Context Analysis is a living process. It can be repeated with fresh data and more relevant inputs in future. I am sure NDMA and WFP as long term partners in humanitarian efforts will continue to cooperate towards ICA+ in near future.

I must also congratulate all contributors to the process and thank them for their valuable support.

Lieutenant General Omar Mahmood Hayat, HI (M)
Chairman NDMA

PREFACE

Supporting people who are vulnerable to food insecurity in Pakistan and reducing the risks they face from climate-related natural shocks, thereby protecting their development gains and enabling further progress in highly food insecure and risk-prone areas, has become an increasingly important part of WFP's assistance in the country through the current Protracted Relief and Recovery Operation (PRRO) for 2016-2017. In the Country Strategic Plan (CSP) being developed for 2018-2022, WFP is tailoring support between humanitarian, recovery and development efforts in ways that make the most sense according to specific geographical contexts.

WFP has been collaborating with the Pakistan's National Disaster Management Authority (NDMA) in various activities as agreed in our Memorandum of Understanding (MoU) signed in 2016 and Annual Work Plans of 2016 and 2017, which have contributed to the strengthening of emergency preparedness and response capacities of the federal as well as provincial governments.

Under the overall leadership of NDMA, in partnership with relevant line ministries and technical agencies, WFP Pakistan has carried out an important *"Integrated Context Analysis of vulnerability to food insecurity and natural hazards" (ICA)* based on existing datasets to identify and rank districts by the level of these risks. This Report presents results on the vulnerability to food insecurity in 130 districts in four provinces as well as FATA. It has complete data for all 156 districts in the country on major natural hazards (flood, drought), core lenses (hazards of soil erosions, land slide, Glacial Lake Outburst Flood, earthquake, land degradation), including additional contextual information (land cover, population density).

The Report provides a solid foundation to more effectively inform the programming, targeting and decision making of *medium-term and long-term* broad programmatic strategies regarding social safety net, disaster risk reduction, early warning and disaster preparedness. It also helps guide subsequent Seasonal Livelihood Programming at the district level and Community-based Participatory Planning at the community level. The ICA also provides relevant products and materials for advocacy, capacity development and future replication in order to update this analysis or carry out similar analyses.

I congratulate NDMA for its important leading role, coordination and strong engagement throughout this study. It has been a source of pride to work alongside the Government of Pakistan, NDMA, relevant agencies and departments providing recovery and development support related to food security, resilience building and disaster risk reduction.

I would like to extend my thanks to the Ministry of Planning, Development and Reforms, Ministry of Climate Change, Pakistan Bureau of Statistics, Pakistan Meteorology Department, Space and Upper Atmosphere Research Commission, Pakistan Agriculture Research Council, Disaster Management Authority of all the provinces and regions, the United Nations Food and Agriculture Organization and the International Food Policy Research Institute of Pakistan, for their partnership and invaluable contributions in executing this study.

I would also like to reaffirm WFP's commitment to continue and expand fruitful collaboration with the Government for improved food security, livelihood and resilience in the country.

Finbarr Curran
Representative and Country Director
The United Nations World Food Programme

ACKNOWLEDGEMENT

"*Integrated Context Analysis on Vulnerability to Food Insecurity and Natural Hazards" (ICA)* is a joint initiative by the United Nations World Food Programme (WFP) and the National Disaster Management Authority (NDMA) in close collaboration with the United Nations Food and Agriculture Organization (FAO) and relevant line departments, ministries and technical institutions of Pakistan. The study has been carried out under the overall leadership of NDMA from December 2016 to September 2017.

Chairman of Steering Committee and Lead of Technical Committee along with ICA team members from WFP would like to extend their gratitude to all individuals, departments and agencies forming part of the two Committees that led the process both directly and indirectly. In particular Director Generals of all Provincial Disaster Management Authorities including SDMA (AJK), FDMA (FATA), GBDMA (GB) and esteemed representatives of Provincial Planning and Departments.

Steering Committee was chaired by Brig. Mukhtar Ahmed, Member (Operations) NDMA, and consisted of other members including Dr. Mubarak Ali, Member (Food Security & Climate Change), Ministry of Planning Development and Reforms (MPD&R); Mr. Ishrat Ali, Joint Secretary (Development), Ministry of Climate Change (MoCC); Dr. Umer Farooq, Member (Social Sciences Division), Pakistan Agriculture Research Council (PARC); Mr. Ismail Khan, Deputy Director General, Pakistan Bureau of Statistics (PBS); Dr. Stephen Prescott Davies, Senior Research Fellow & Program Leader, International Food Policy Research Institute (IFPRI); Mr. Raja Ajmal Jahangeer, Statistician, FAO Pakistan; Mr. Kevin Wyjad, ICA Coordinator, WFP Headquarters Italy; Mr. William Affif, Head of Programme & Policy, WFP Pakistan; representatives of the Disaster Management Authorities of the province of Balochstan, Khyber Pakhtunkhwa (KP), Punjab and Sindh and the regions including Federally Administered Tribal Areas (FATA), Gilgit Baltistan (GB) and Azad Jammu & Kashmir (AJ&K).

Engr. Syed Muhammad Ayub Shah, Head of ICT Directorate, NDMA chaired the Technical Committee comprising representation from multiple institutions. Committee comprised of specialists including Dr. Azmat Hayat, Director Pakistan Meteorological Department (PMD); Mr. Syed Zohair Bukhari, Director Pakistan Space and Upper Atmosphere Research Commission (SUPARCO); Mr. Ismail Khan, Deputy Director General Pakistan Bureau of Statistics (PBS); Dr. Muhammad Ishaq, Director Pakistan Agriculture Research Council (PARC); Ms. Mehwish Ali, GIS Analyst FAO Pakistan; Ms. Nadine Lombardo-Han, GIS/ICA specialist WFP Headquarters Italy; Mr. Iftikhar Abbas, Programme & Policy Officer (GIS) and Ms. Thi Van Hoang, Head of Vulnerability Analysis & Mapping Unit (VAM) WFP Pakistan. Special thanks to Ms. Nadine Lombardo-Han for her enormous support and advice in technical training on ICA methodology and tools, data triangulation, analysis, write-up of the Technical Report and finalization of all ICA by-products.

Study team gratefully acknowledges contributions from Mr. Muhammad Zafar Iqbal, Director (Relief & Response) NDMA; Mr. Muhammad Razi, Deputy Director (Relief & Response) NDMA, for the coordination and secretariat support.

The team highly appreciates the overall guidance and strong support from Lieutenant General Omar Mahmood Hayat HI(M) Chairman NDMA; Mr. Finbarr Curran, Representative and Country Director WFP Pakistan; Ms. Sheila Grudem, Deputy Director of Emergency and Response Support Division (OSE) and Mr. Zlatan Milisic, Deputy Director of Direct Implementation Programme Service (OSZP), WFP Headquarters Italy.

Finally, and most importantly, we would like to sincerely thank all stakeholders who actively participated in ICA Technical and Programmatic Consultation workshops extensively organized at provincial and national levels. They generously rendered their time and valuable inputs towards validation of preliminary results and identification of relevant broad medium-term and long-term programmatic strategies, without whom this report would have not been possible. The report will contribute towards reducing the vulnerability to food insecurity and risks to climate-related natural shocks.

EXECUTIVE SUMMARY

ICA is a WFP corporate programme design tool, used in over 20 countries around the globe. It provides evidence to support strategic placement and combination of four broad programmatic themes: Safety Net, Disaster Risk Reduction (DRR), Early Warning and Disaster Preparedness.

ICA for Pakistan was planned during November – December 2016 based on recommendations of a Stakeholder Sensitization Workshop (October 2016) and implemented during January – October 2017 under the leadership of NDMA, involving relevant line ministries, WFP, FAO and various technical institutions.

The ICA aims to: i) Categorise districts by the level of recurrence of vulnerability to food insecurity, natural hazards, core lenses and relevant contextual factors; ii) Provide information for more effective medium and long-term food security interventions related to resilience building and disaster risk reduction; and iii) Provide a set of relevant products and materials for advocacy, capacity building, future replication or update.

ICA includes two core dimensions (vulnerability to food insecurity and natural hazards: flood and drought), five core lenses (land slide, Glacial Lake Outburst Flood, earthquake, soil erosion, land degradation), and two contextual factors (dominant land cover, population density). District is a geographical unit of analysis.

ICA uses Multi-dimensional Poverty Index (MPI) as a proxy for vulnerability to food security for four provinces (Balochistan, KP, Sindh, Punjab including Islamabad). It is derived from six rounds of Pakistan's Social and Living Standard Measurement Surveys (2004/05 – 2014/15) released by Government in 2016. For FATA, due to lack of MPI data, food security prevalence rate of three in-depth assessments conducted by WFP and partners in 2014 - 2017 is used.

National datasets available for all districts in Pakistan for flood, drought, landslide, GLOF and earthquake are used. For soil erosion, land degradation, dominant land cover and population density, Pakistan components of global datasets, are used.

Technical findings and broad programmatic recommendations are based on combined level of recurrence of two core dimensions. It classifies 123 districts of four provinces and 7 Agencies of FATA into nine different ICA Areas which are further condensed into five ICA Categories to help formulate broad programmatic recommendations. *Maps of final ICA Areas and broad programmatic recommendations are presented on next pages.*

Category 1 comprises 42 districts (19 in Balochistan, 13 in Sindh, 7 in KP and 3 in Punjab) having high recurrence of vulnerability to food insecurity coupled with high or medium levels of natural hazards. These districts would benefit from combinations of food security focused safety nets and comprehensive disaster risk reduction (DRR) interventions including infrastructure improvement, early warning and disaster preparedness.

Category 2 comprises 20 districts (7 in Sindh, 5 in KP, 4 in Punjab, and 4 in Balochistan) have moderate recurrence of vulnerability to food insecurity coupled with high or medium natural hazards. In these districts, flexible food security safety nets, productive or protective are suggested. Alternatively, needs-based livelihood recovery efforts in unfavourable years could protect marginal households against negative coping strategies that undermine development gains. High natural hazards suggest broad DRR interventions including infrastructure improvement, early warning and disaster preparedness.

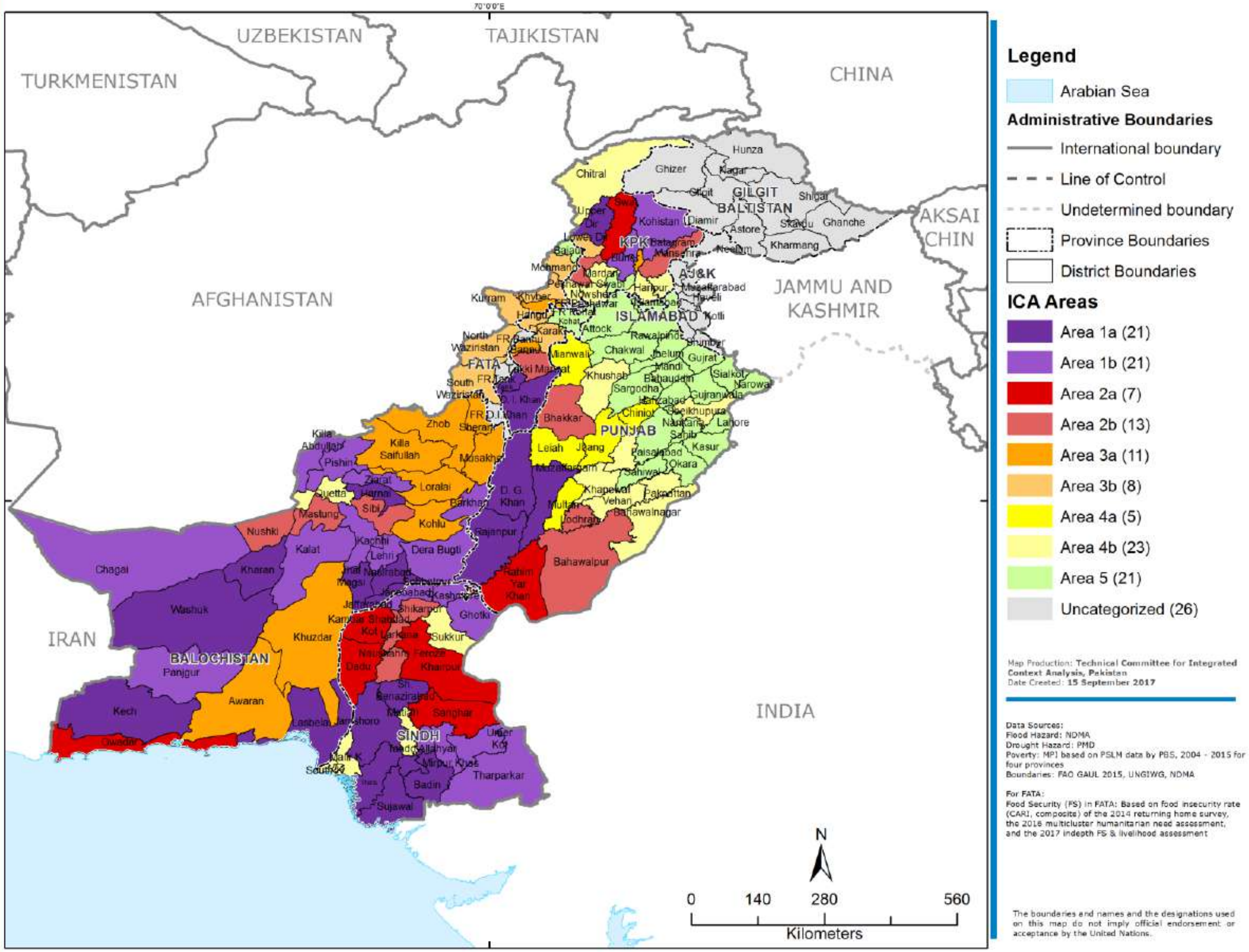
Category 3 comprises 19 districts (8 in Balochistan, 6 in FATA and 5 in KP) showing high or moderate recurrence of vulnerability to food insecurity coupled with relatively low natural hazards. In Area 3A districts food security safety net approach similar to districts in Category 1 are appropriate, i.e. year round protective safety nets. In ICA Area 3B districts either flexible safety nets, or livelihood recovery/protection programmes would be relevant.

Category 4 comprises 28 districts (12 in Punjab, 9 in Sindh, 6 in KP, 1 in Balochistan) exhibiting low recurrence of vulnerability to food insecurity with high or medium level of natural hazards. Broad DRR (including infrastructure improvement as well as early warning and disaster preparedness) is a priority. Specific, targeted interventions to improve food security for the most vulnerable people would be needed.

Category 5 comprises 21 districts (18 in Punjab, 2 in KP, 1 in FATA) showing low recurrence of vulnerability to food insecurity and also low natural hazards. It's recommended to ensure effective early warning that is set within systems to trigger disaster preparedness measures.

Due to lack of food security or MPI data, ICA categorisations are not performed for FATA Frontier Regions (FR), Gilgit Baltistan, and Azad Jammu and Kashmir (AJ&K) regions. However, available data on natural hazards, core lenses and contextual factors in these regions are still very useful to help in programming of disaster risk reduction and resilience building related strategies.

Pakistan
Integrated Context Analysis - Areas



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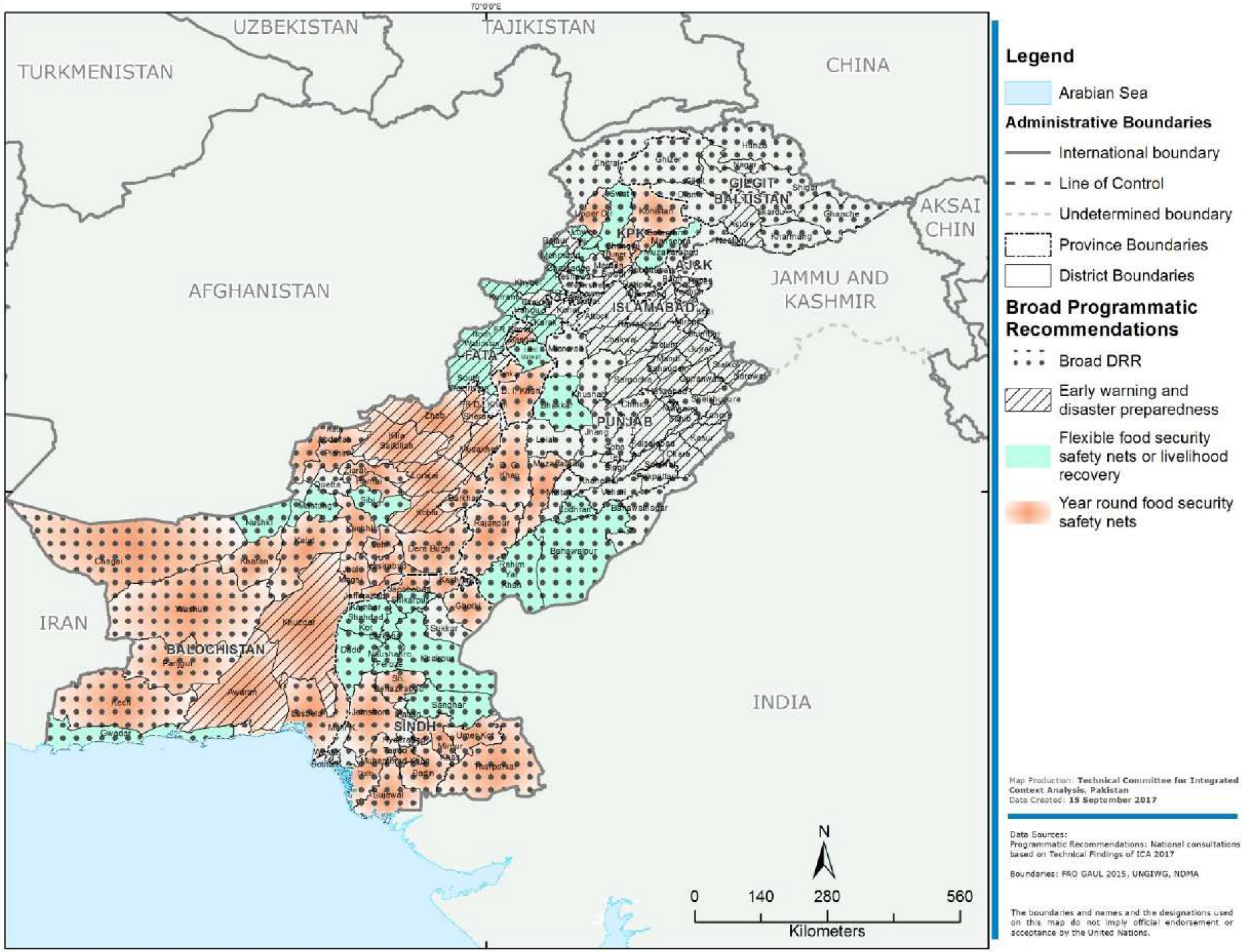
Pakistan
Integrated Context Analysis
Broad Programmatic Recommendations



Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Programmatic Recommendations: National consultations based on Technical Findings of ICA 2017

Boundaries: FAO GAUL 2015, UNGIWG, NDMA

The boundaries and names and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

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Table of Contents

Part - I:
Technical Analysis

1. Introduction

Background

The ICA is a programming tool that emerges from partnership between WFP Programme, Vulnerability Analysis & Mapping (VAM) and Emergency Preparedness and Support Response Division (OSEP) staff at WFP country office, regional bureau and Headquarters.

The **objective** of ICA is to perform, through spatial analysis techniques, identification of geographical areas with persistent trends of food insecurity and different levels of natural shocks (hazards). By overlaying these core dimensions, areas can be identified to formulate broad programmatic strategies, including Safety Nets, Disaster Risk Reduction (DRR), Early Warning and Disaster Preparedness to improve food security and reduce vulnerability to natural disasters.

Beyond the core ICA dimensions as mentioned above, additional layers related to food security and natural hazards (e.g. landslide, land degradation) and relevant to programme strategies are overlaid as lenses enabling further strategic adjustments and more specific recommendations. ICA can also be used to identify areas where further in-depth studies or food security monitoring and assessment systems are needed.

ICA applies three pronged approach (3PA). First Prong aims at identification of priority areas (districts) and framing of broad programmatic strategies. Second Prong focuses on Seasonal Livelihood Programming (SLP) for prioritized districts to develop specific programs. Third Prong uses Community Based Participatory Planning (CBPP) at sub district level, to identify more specific programs or interventions. Close collaboration with governments, partners and local populace is closely and consistently involved and consulted throughout the process.

ICA in Pakistan is conducted from January to October 2017. This publication comprises of two parts, Technical Report and Programmatic Recommendations. Technical Report presents detailed technical aspects, methodology, rationales for adopted data sets and results. Programmatic Recommendations, on the other hand, highlights broad programmatic strategies to guide towards the next step, the SLP and CBPP subsequently.

Rationale

WFP Pakistan organized first Stakeholders Consultation Workshop on ICA in October 2016. Analysts and programming / planning officers from relevant government departments, ministries, organizations, institutions, UN agencies and Non-Governmental Organizations (NGO) participated. WFP ICA methodology, process and outputs of pilot ICA were presented. These were jointly discussed in detail for delineating technical requirements and feasibility of ICA in Pakistan.

The majority of participants considered ICA relevant and a promising programming tool for Pakistan especially for medium-term and long-term planning and developing food security and resilience-building programs. As a result, stakeholders suggested WFP to plan and conduct ICA in 2017 in partnership with relevant technical partners (NDMA, FAO, PBS, etc.). WFP accordingly began ICA in January 2017 and the whole process was completed in October 2017.

ICA results are of particular interest for the government Planning and Development Departments, Disaster Management Authorities and all relevant stakeholders at all levels. These results are of great value to the policy and decision makers as well as public representatives.

Results of ICA are considered crucially important for the start of SDG2 implementation, preparation for the One UN Programme (OP-III) and development of WFP Country Strategy Plan (CSP) for 2018-2022 in Pakistan. Alongside, they of immense interest and use for the academia and research institutions related to the subject at large.

Objectives

ICA in Pakistan ***primarily aims*** at:

I. Identifying and ranking districts into ICA Areas and Categories based on the level of recurrence of vulnerability to food insecurity and natural hazards (flood and drought) as Core Dimensions to frame broad programmatic recommendations;

II. Overlaying ICA Areas with Core Lenses (Landslide, GLOF, Earthquake, Land Degradation hazards) and additional contextual factors (dominant land cover and population density) to further refine broad programmatic recommendations;

III. Providing sound evidence for more effective programming of relevant *medium and long-term* food security interventions, particularly resilience building and disaster risk reduction; and

IV. Providing a set of relevant products and materials for advocacy, capacity building and future replication of the process for updating this analysis or carrying out similar other analyses.

Partnerships

Following agencies, organisations and government bodies contributed to this analysis:

- National Disaster Management Authority
- Ministry of Climate Change
- Ministry of National Food Security & Research
- Ministry of Planning, Development & Reforms
- Pakistan Agriculture Research Council
- Pakistan Bureau of Statistics
- Pakistan Meteorological Department
- Pakistan Space and Upper Atmosphere Research Commission
- Provincial Disaster Management Authorities of Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan
- Federally Administered Tribal Areas Disaster Management Authority
- Gilgit Baltistan Disaster Management Authority
- Azad Jammu & Kashmir State Disaster Management Authority
- Food and Agriculture Organization of the United Nations Pakistan
- International Food Policy Research Institute Pakistan
- World Food Programme Pakistan and Headquarters Italy

Selection of Core Dimensions, Lenses, Indicators and Data Sets

This part presents an overview of ICA core dimensions, core lenses and their interpretation in terms of identifying programme themes relevant to particular geographic areas. Each layer included has a specific purpose, with due agreement reached at or about, by all stakeholders during various ICA Technical Committee meetings in an evolving and progressive manner.

Relevant indicators and available data sets were extensively identified and explored over the course of Technical Committee meetings and the best options were selected by triangulating multiple sources where possible. Outcomes of data selection process are summarized in the table below:

Dimensions & Lenses	Stressors	Indicators & Source
Core Dimensions	Food insecurity/ Vulnerability to Food insecurity	Multi-dimensional Poverty Index (Based on 6 rounds of PSLM; 2004/5 – 2014/15) FATA: Composite Food Insecurity Rate (based on 3 Food Security Assessments conducted in 2014, 2016 & 2017 by WFP Pakistan and FATA Secretariat)
	Natural hazards: - Flood - Drought	Flood Hazard Index (NDMA; 1950-2015) Drought Hazard Index (PMD; 1951-2010)
Core Lenses	Landslide	Hazard Index (NDMA; 1950--2015)
	GLOF	Hazard Index (NDMA; 1950-2015)
	Earthquake	Hazard Index (NDMA; 1905-2015)
	Land Degradation	Land Cover Change (WFP HQ; 1992-2015) Erosion Propensity (WFP HQ)
Additional Contextual Information	Population Land cover	Estimated Population Figures (Provincial Bureau of Statistics for each province; 2004/5 – 2014/15) Population Density (LandScan 2015) Dominant Land Cover (ESA)

The selection of two natural hazards (flood and drought) and core lenses was based mainly on their potential impact on vulnerability to food insecurity. The basic geographic unit of analysis chosen for ICA was district, which is the second-level administrative unit in Pakistan.

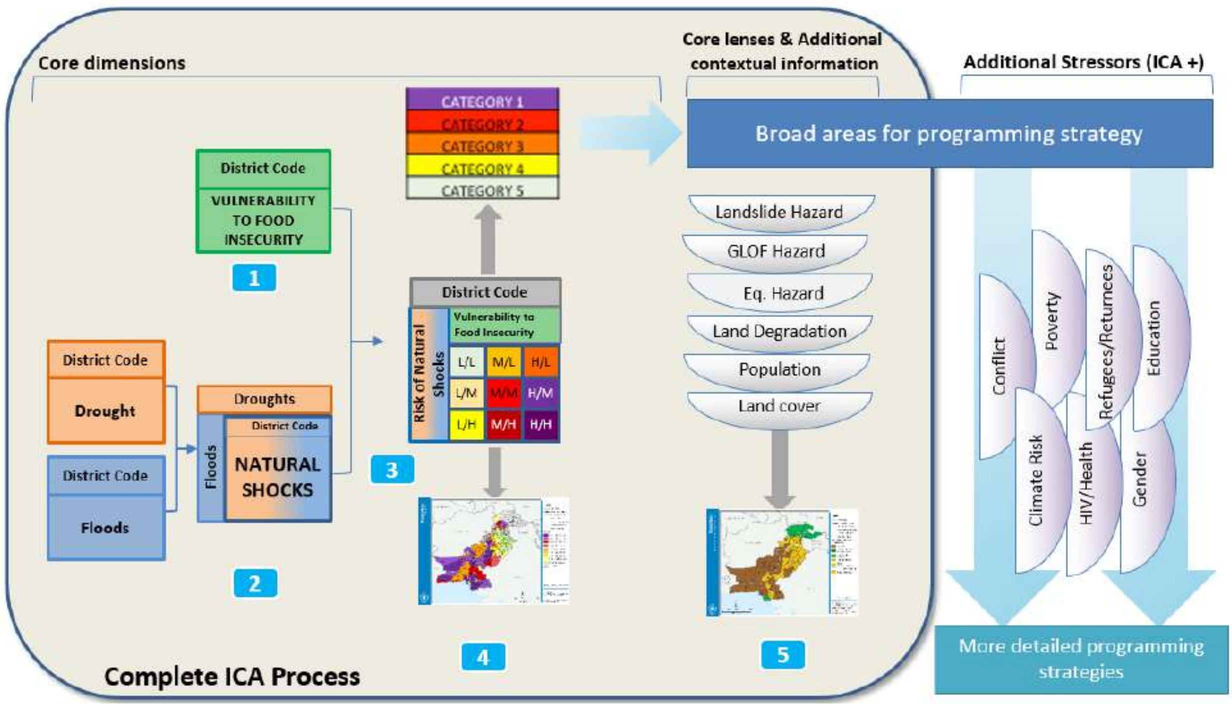
Unfortunately, data availability was a key constraint. Certain datasets of interest, such as nutrition, could not be included due to non availability of representative results at district level as well as lack of adequate number of rounds for trend analysis. Other indicators were available only for certain provinces, and therefore did not satisfy the ICA requirements of complete national coverage.

ICA Core Steps

ICA is started by analysing Vulnerability to Food Insecurity data as a core dimension duly indicated as step 1 in the figure below. In step 2, two other core dimensions (flood and drought) are analysed to form a consolidated layer of natural hazards using cross tabulation. In Step 3, results of step 1 and step 2 are combined (using cross tabulation) to identify nine ICA Areas depicting relative standing of districts with regards to the Vulnerability to Food Insecurity and combined natural hazards.

In Step 4, Nine ICA Areas are grouped into Five Categories to simplify for visual interpretation and framing broad programmatic recommendations relevant to each category. In Step 5, each of Core Lenses and Contextual Information Layer is overlaid on the ICA Areas to refine broad programmatic recommendations formed in Step 4.

ICA Areas and Categories are depicted in the following diagram:



Interpretation & Utilization of ICA Data Layers

Core Dimensions

Food Insecurity / Vulnerability to Food Insecurity Layer

- This layer helps in identifying food security levels of different geographic areas by highlighting areas where vulnerability to food insecurity consistently recurs (over or beyond a defined threshold over a period of time).

Natural Hazard Layer

- This layer helps in identifying areas based on the levels of climate-related hazards.

ICA Areas and Categories

ICA Areas

- Nine ICA areas depict recurrence of vulnerability to food insecurity and natural hazards as an intersection. These are formed by cross tabulation of Vulnerability to Food Insecurity and Combined Natural Hazards classifications.

ICA Categories

- Five ICA Categories are formed by combining ICA Areas (e.g., Area 1a and 1b becoming Category 1). These assist in identifying districts where broad programmatic recommendations (safety nets, DRR, early warning and disaster preparedness) are required.

Lenses

Landslide Hazard Lens

- Enables focus on specific areas where landslide hazard is high, helping in refining DRR activities and where additional land stabilization / rehabilitation is required.

GLOF Hazard Lens

- Enables focus on specific areas where GLOF hazard is high, helping to refine DRR activities and where additional mitigation measures are required.

Earthquake Hazard Lens

- Enables focus on specific areas where earthquake hazard is high, helping to refine and focus emergency preparedness activities.

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 are required to halt and reverse land degradation, either as part of safety nets, DRR or stand-alone programmes and through policy.

Additional Contextual Information

Population Density

- Shows the geographic concentration of population, which may aggravate impacts of natural shocks and vulnerability to food insecurity.
- Allows for programmes to be targeted more efficiently from resource & logistics perspective.

Land Cover

- Provides insight into how programmatic themes can be adjusted to local land use/livelihood systems.

Estimated Number of People Vulnerable to Food Insecurity

- Estimates how many people are in need of long-term assistance and how many may need assistance if vulnerability factor(s) of food insecurity significantly deteriorates by looking at the relative levels of recurring food insecurity or vulnerability to food insecurity over the past years (minimum of 5 years).

2. Vulnerability to Food Insecurity Analysis

Analysis - 4 Provinces

Data Selection Process

ICA food security analysis aimed at assessing how chosen indicator values fluctuated over time against a defined threshold. Number of times these chosen indicator exceed threshold value are counted for determining recurrence of high food insecurity. This necessitates the time period to be a minimum of five years (with a minimum of 3 data points/rounds) in order to effectively determine long-term programming.

Prevalence of Undernourishment (PoU) data at provincial level were initially expected from the parallel Trend Analysis of HIES data 2001-2014 led by Ministry of Planning Development and Reforms. However, due to unexpected delays in obtaining the data as well as concerns over the lack of representativeness of PoU data at district level decision was made to use an alternative indicator.

Consequently, ICA uses Multi-Dimensional Poverty Index (MPI) data as a relevant proxy for vulnerability to food insecurity. MPI was officially endorsed by the Ministry of Planning Development and Reforms and UNDP in 2016. It is based on various indicators related to vulnerability to food insecurity. It was collected as part of Pakistan Social and Living Standard Measurement (PSLM) surveys.

PSLM data was available from 2004/05 through 2014/15, collected once every alternate year. A total of 6 rounds[1] were available meeting the minimum data requirements of ICA. This dataset covers 123 districts of 4 provinces of Pakistan (Khyber Pakhtunkhwa, Sindh, Balochistan and Punjab including Islamabad). The remaining 33 districts (7 Agencies and 6 Frontier Regions in Federally Administered Tribal Areas - FATA, 10 districts in Gilgit Baltistan-GB, and 10 districts in Azad Jammu Kashmir- AJK) did not have MPI data available and are not covered in this analysis.

Methodology

The analysis considered MPI, a composite index comprising 15 indicators capturing dimensions of health, education and standard of living. Mathematically, MPI combines two aspects of poverty:

i. Incidence of poverty (the percentage of people who are identified as multidimensional poor, or poverty headcount);

ii. Intensity of poverty (the average percentage of dimensions in which poor people are deprived).

MPI threshold of 0.329 is used to identify districts vulnerable to food insecurity. It is an average of all 652 district-level observations over 6 PSLM rounds. The analysis determined number of times historical MPI values were above the set threshold of 0.329 for each district.

The number of recurrences were then classified in three equal groups (Tercile):

Vulnerability to food insecurity above threshold			
Recurrences of MPI > 0.329	**0 – 1**	**2 – 4**	**5 - 6**
Vulnerability to food insecurity reclassification	Low (1)	Medium (2)	High (3)

Results

The maps containing results are on the following page.

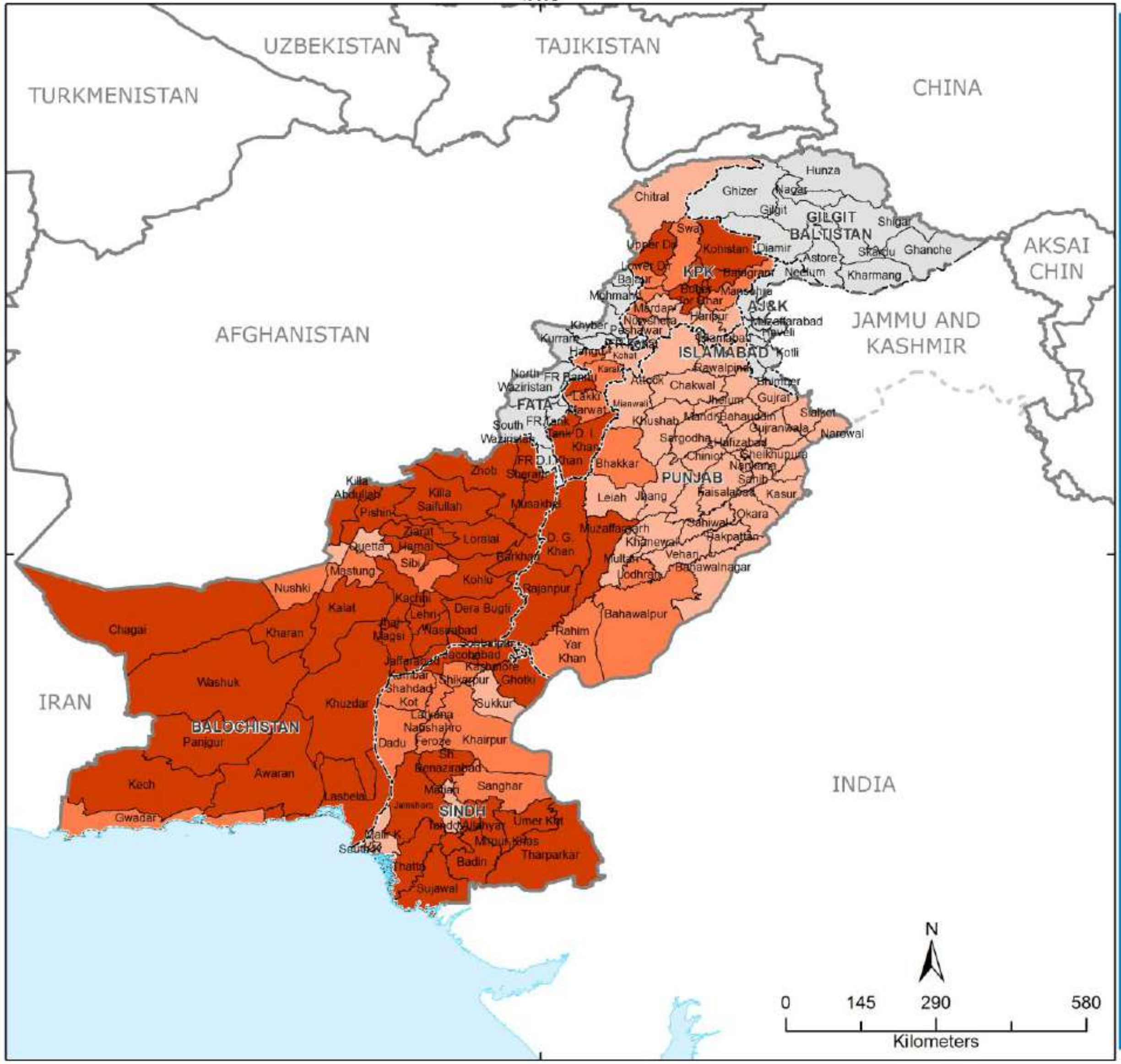
[1] Report on Multidimensional Poverty in Pakistan. Ministry of Planning, Development & Reforms, in collaboration with Oxford Poverty and Human Development Initiative (OPHI) and UNDP, 2016. Certain districts were not covered in all rounds - for more details, see section 11.

Limitations

It should be noted that while the MPI is not a direct indicator of food security outcome although it comprises of 15 indicators of which 9 have a strong relationship with food access and food utilization. These are considered as key drivers of food insecurity in the country. Second limitation is the lack of MPI data in 33 districts as mentioned above.

Pakistan

Recurrence of Vulnerability to Food Insecurity (MPI > 0.329)



Legend

- Arabian Sea

Administrative Boundaries

- International boundary
- Line of Control
- Undetermined boundary
- Province Boundaries
- District Boundaries

Recurrence of Vulnerability to Food Insecurity

- Low (0 - 1 recurrences)
- Medium (2 - 4 recurrences)
- High (5 - 6 recurrences)
- No Data

Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Poverty: MPI based on PSLM data by PBS, 2004 - 2015
Boundaries: FAO GAUL 2015, UNGIWG, NDMA

The boundaries and names and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

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Analysis - FATA

Data Selection Process

In the absence of MPI data for FATA, given existing circumstances of the region and importance of evidence based information, use of direct food security outcome indicator was considered acceptable.

Composite food insecurity rate is used for FATA. It is an indicator that results from the combination of food consumption, food expenditure share and livelihood-based coping at the household level. This analysis is guided by the Consolidated Approach to Reporting on Indicators of Food Security (CARI, WFP 2014).

The trend analysis is based on three assessments conducted among returned households, including two In-depth Food Security and Livelihood Assessments conducted by WFP in December 2014 and February-March 2017 and the Multi-cluster Humanitarian Needs Assessment led by OCHA involving different clusters and organizations including WFP in August 2016. The data is representative at the Agency level.

Methodology

The average rate of food insecurity of 38% was used as threshold. Areas were classified considering the number of times the indicator value was above the threshold, in three equal groups:

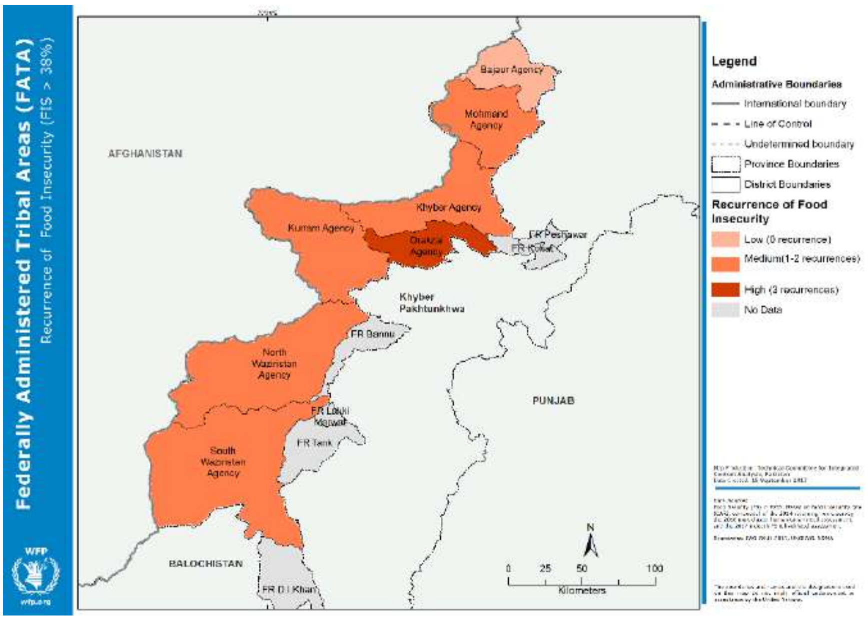
Recurrence of food insecurity above threshold			
Recurrences of food insecurity >38%	**0**	**1 – 2**	**3**
Food insecurity reclassification	Low (1)	Medium (2)	High (3)

Results

The results are presented in the map below.

Limitations

It should be noted that these surveys only included returned households and not the general population. However, the returnees do account for the vast majority (84%) of the total population in FATA. Furthermore, the datasets cover a short period of time (less than the recommended timeframe of 5 years) – a period in which a substantial amount of humanitarian and early recovery assistance (food and cash transfers) was provided to returnees in FATA. This may also have influenced the levels of food insecurity vis-à-vis a normal situation without large-scale assistance.



3. Natural Hazard Analysis

The natural hazard analysis is carried out using floods & drought data. However other natural hazards are also identified as relevant to the context of the country. They are accordingly considered as core lenses due to one of the two reasons: 1) they are highly localized events (e.g. landslides, GLOF) and 2) they are events beyond the scope of disaster reduction and mitigation (e.g. earthquakes).

Data for the two hazards identified for the core dimensions are analysed at district level, as described in the following section, then combined to create a natural hazard map.

Floods

Data Selection Process

Flood data from the NDMA is identified as the key dataset with adequate coverage for the ICA (minimum of 20 years of historical records). The data is flood hazard index based on the number of recorded flood events from 1950 to 2015 and the severity including 2010 super-flood[2]. The original dataset combined these two parameters with Jenks Natural Breaks used to classify districts into a 5-point scale of hazard levels.

Methodology

5 levels hazard index is reclassified into a 3-point scale as follows.

Flood hazard			
Flood hazard	Very Low – Low	Medium	High – Very High
Flood hazard reclassification	Low (1)	Medium (2)	High (3)

Results

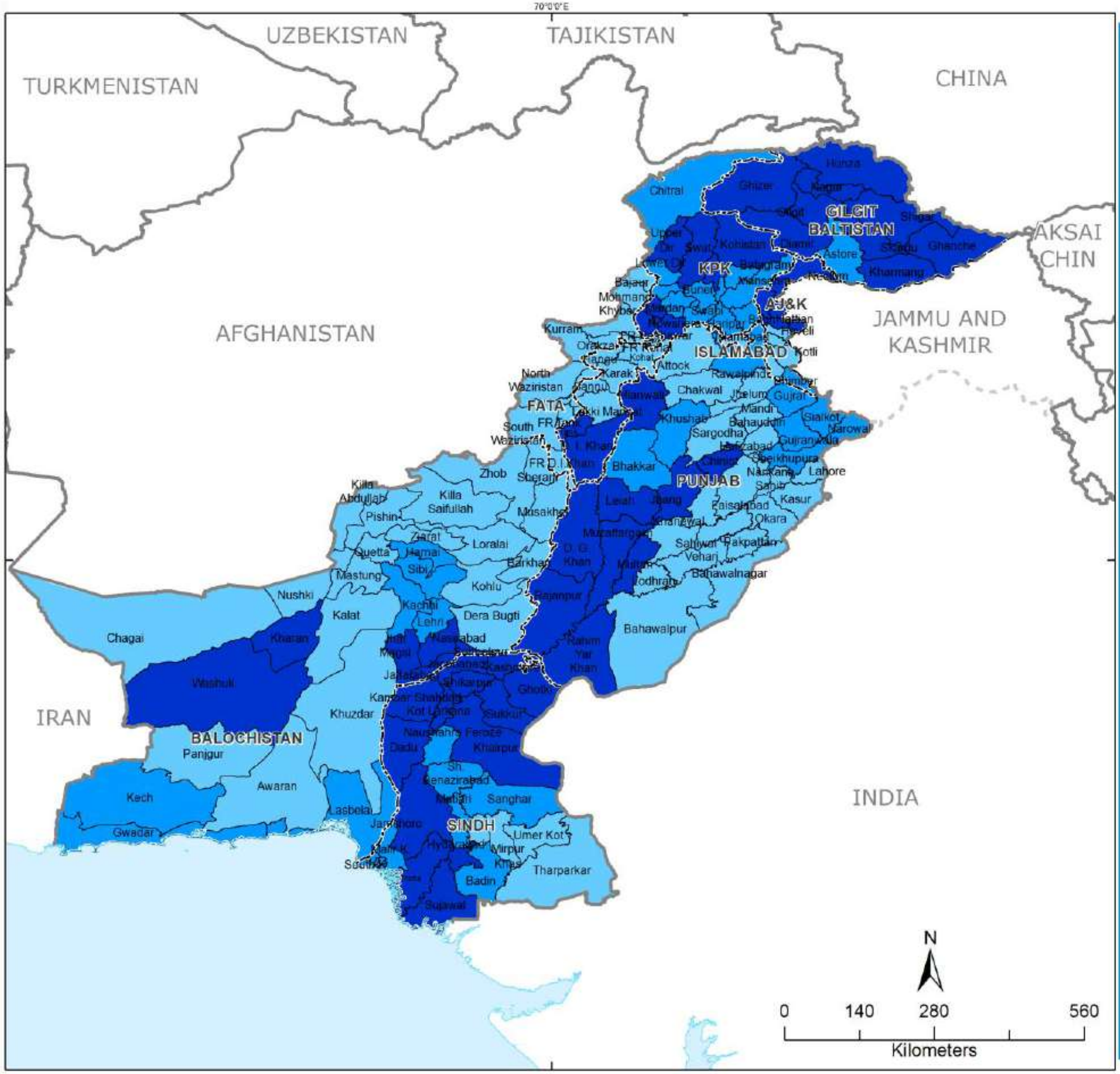
The results are presented in the map on the following page.

Limitations

There are no significant limitations to the dataset selected or methodology used.

[2] NDMA & Japan International Cooperation Agency. (2013). The Project for National Disaster Management Plan in the Islamic Republic of Pakistan.

Pakistan
Flood Hazard



Legend

Arabian Sea

Administrative Boundaries

- International boundary
- Line of Control
- Undetermined boundary
- Province Boundaries
- District Boundaries

Flood Hazard

- Low (65 Districts)
- Medium (40 Districts)
- High (51 Districts)

Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Flood Hazard: NDMA NDMP 2015
Boundaries: FAO GAUL 2015, UNGIWG, NDMA

The boundaries and names and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

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Drought

Data Selection Process

Drought data was available from three sources: 1) drought hazard index from the NDMA, based on mean annual rainfall; 2) a drought hazard index from the National Drought Monitoring Centre of the Pakistan Meteorological Department (PMD) based on SPI data from 1951 to 2010; and 3) an analysis of number of poor growing seasons from WFP HQs based on satellite Rainfall Estimate data from 1981 to 2015.

The two latter datasets provided a satisfactory historical coverage for the ICA, exceeding the minimum requirement of 20 years. The results were also found to be in close alignment when compared with each other. Ultimately, the dataset from the PMD was selected by the Technical Committee, given that: a) it was based on the longest record of historical precipitation data; b) the data was nationally elaborated and accepted and c) the methodology and results have been recognized academically and published[3].

The selected PMD dataset was based on soil moisture and precipitation data available from 1951 to 2010, which are used to calculate three parameters: 1) dependency on seasonal (winter/monsoon) rainfall; 2) drought frequency (using the Standardized Precipitation Index or SPI); and 3) soil moisture.

Methodology

The original dataset was a 5-point scale of hazard level which is reclassified into a 3-point scale as follows.

Drought hazard			
Drought hazard	**Very Low – Low**	**Moderate**	**High – Extremely High**
Drought hazard reclassification	Low (1)	Medium (2)	High (3)

Results

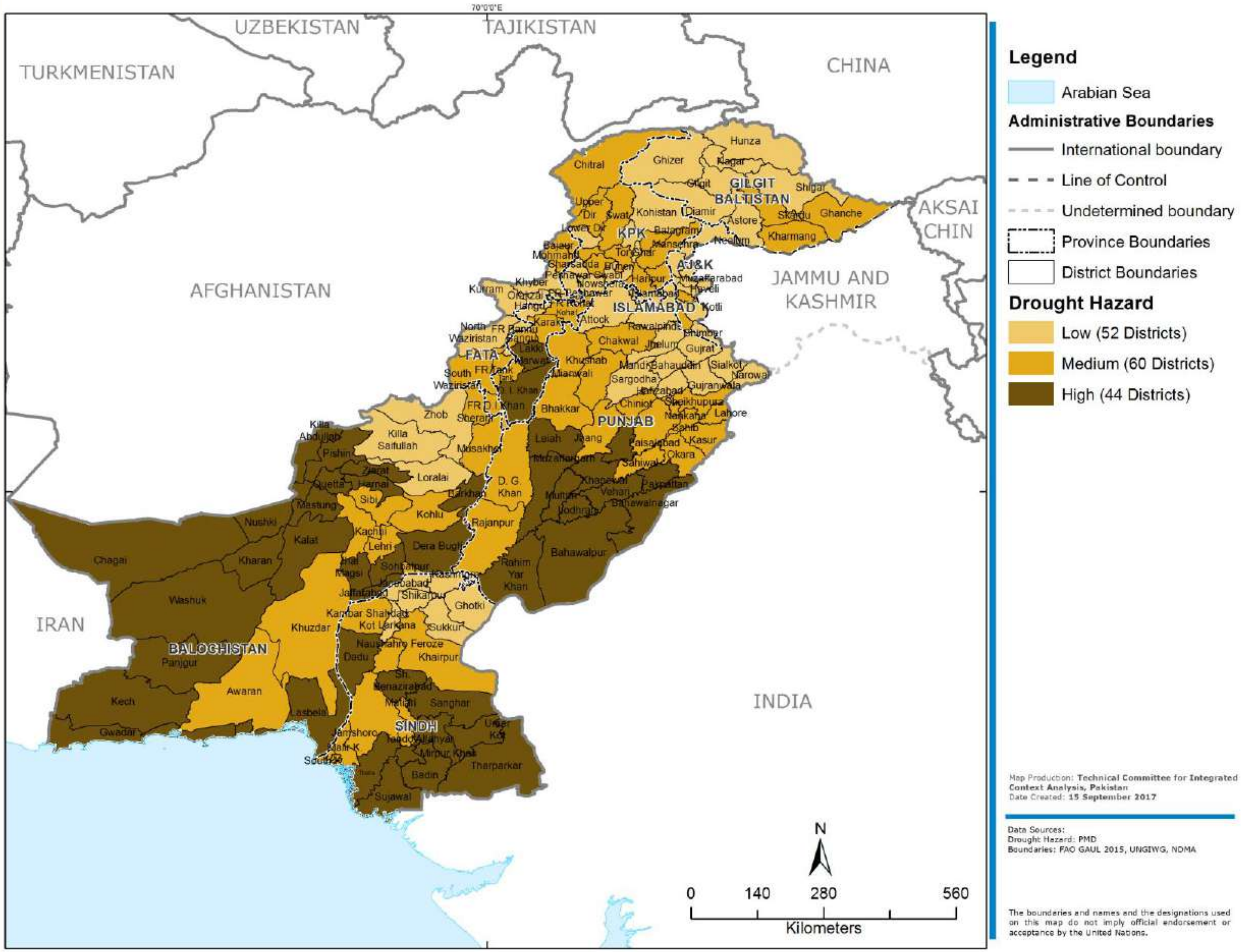
The results are presented in the map on the following page.

Limitations

It should be noted that the dataset used for this analysis is observational datasets for precipitation (GPCC) and remotely sensed for soil moisture (CPC, NOAA) with a spatial resolution of 0.5 degrees (roughly 50km). The GPCC precipitation is considered one of the best observational gridded data and highly correlated with ground precipitation data (Becker et al., 2013). In addition, a few districts that do not have PMD data are classified using WFP HQs dataset as the two datasets are in close alignment.

[3] Adnan, S., Ullah, K. & Gao, S. (2015). Characterization of Drought and Its Assessment over Sindh, Pakistan During 1951 - 2010. Journal of Meteorological Research, Vol. 29, No. 5, 837-857.

Pakistan
Drought Hazard



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Combined Natural Hazards

Methodology

The flood and drought hazard classifications are combined using cross tabulation as shown below. This methodology gives equal consideration to these two types of hazards and highlights areas that are vulnerable to both.

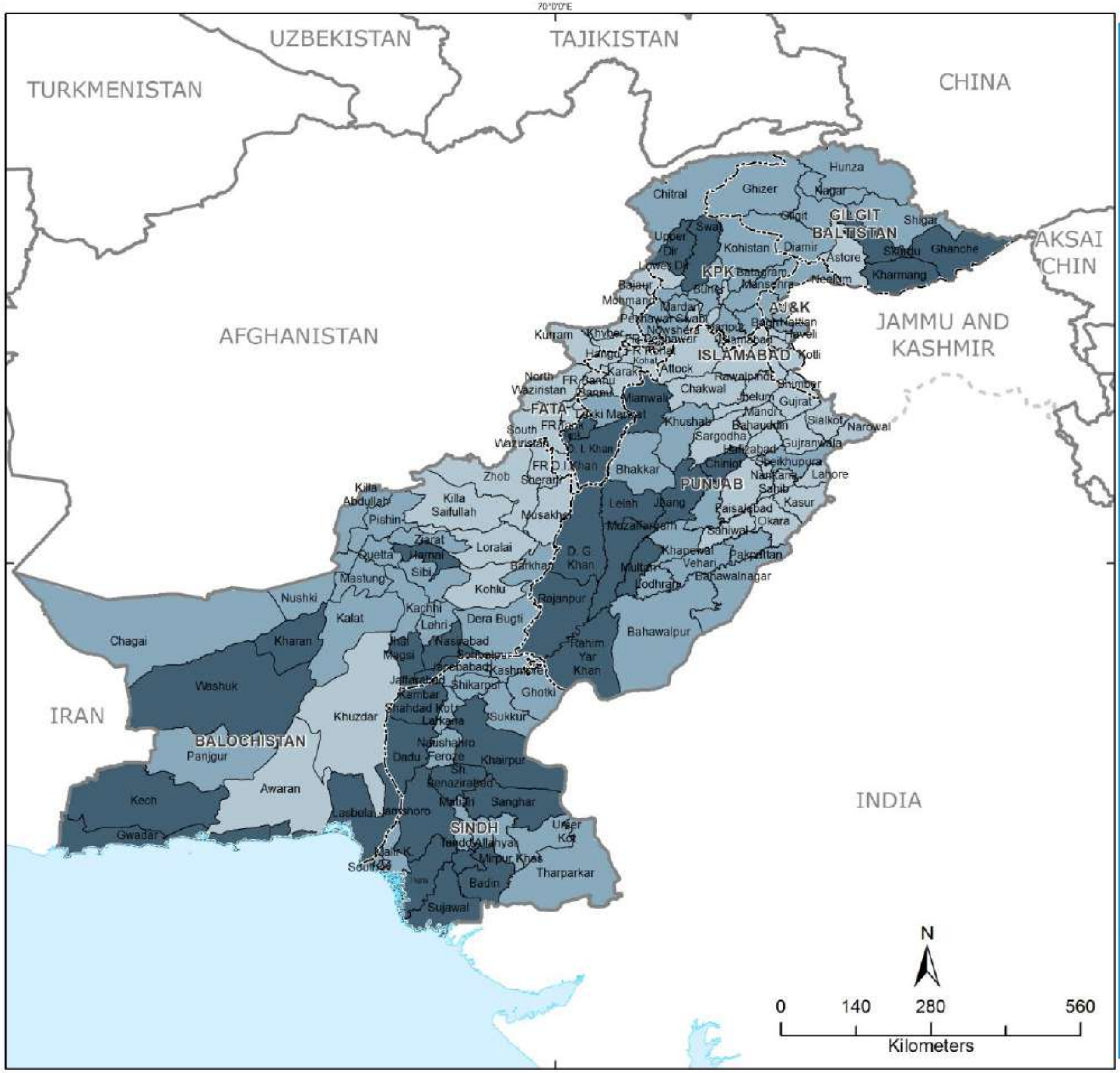
Reclassified drought hazard			
Reclassified flood hazard	Low (1)	Medium (2)	High (3)
Low (1)	Very Low (2)	Low (3)	Moderate (4)
Medium (2)	Low (3)	Moderate (4)	High (5)
High (3)	Moderate (4)	High (5)	Very High (6)

Combined hazard			
Combined natural hazard score	**2 - 3**	**4**	**5 - 6**
Combined hazard reclassification	Low (1)	Medium (2)	High (3)

Results

The results of the analysis are presented in the map on the following page.

Pakistan
Combined Hazard (Flood & Drought)



Legend

Arabian Sea

Administrative Boundaries

- International boundary
- Line of Control
- Undetermined boundary
- Province Boundaries
- District Boundaries

Combined Flood & Drought Hazard

- Low (52 Districts)
- Medium (68 Districts)
- High (36 Districts)

Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Flood Hazard: NDMA NDMP 2015
Drought Hazard: PMD
Boundaries: FAO GAUL 2015, UNGIWG, NDMA

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4. ICA Areas

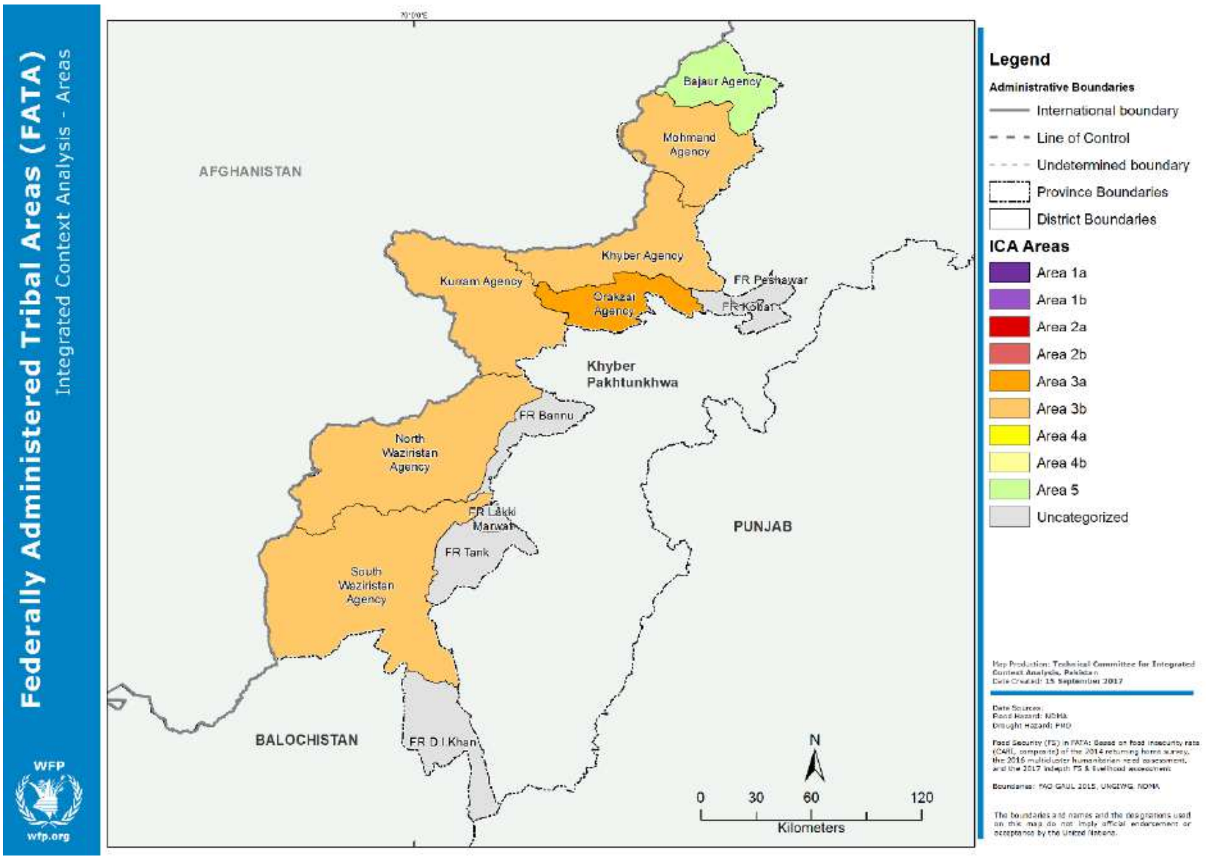
Methodology

The ICA areas map is created by combining three-point scale results for vulnerability to food insecurity and combine natural hazard shown in the previous sections. The high/medium/low values of two dimensions are cross-tabbed, producing nine areas shown in the table below.

Combined level of natural hazards	Recurrence of vulnerability to 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

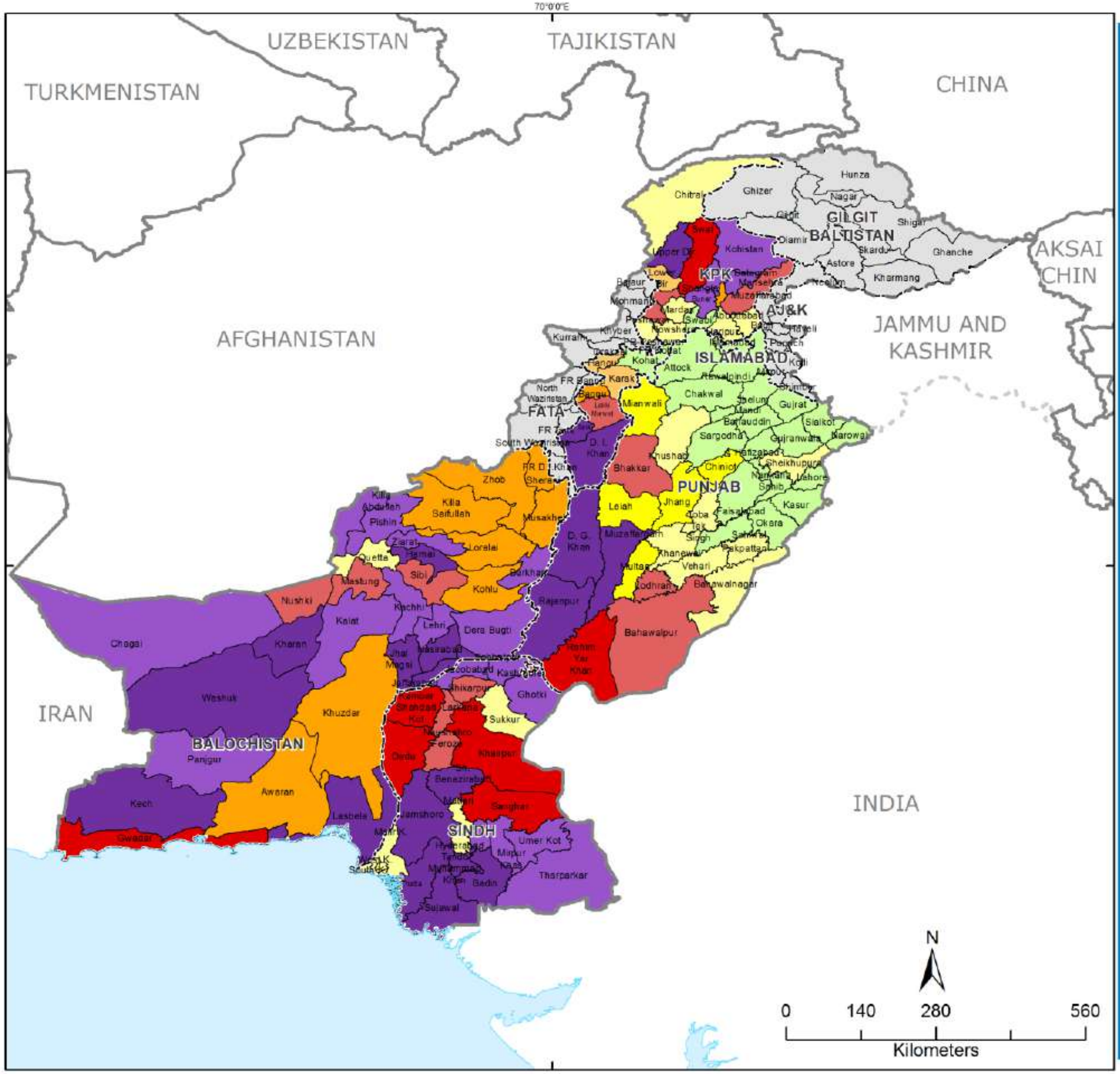
Results

The results for FATA are presented in the map below, followed by the results for each district of the four provinces on the following page.



Pakistan

Integrated Context Analysis - Areas



Legend

Arabian Sea

Administrative Boundaries

International boundary

Line of Control

Undetermined boundary

Province Boundaries

District Boundaries

ICA Areas

Area 1a (21 Districts)

Area 1b (21 Districts)

Area 2a (7 Districts)

Area 2b (13 Districts)

Area 3a (10 Districts)

Area 3b (3 Districts)

Area 4a (5 Districts)

Area 4b (23 Districts)

Area 5 (20 Districts)

Uncategorized

Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Flood Hazard: NDMA
Drought Hazard: PMD
Poverty: MPI based on PSLM data by PBS, 2004 - 2015
Boundaries: FAO GAUL 2015, UNGIWG, NDMA

The boundaries and names and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

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5. ICA Categories

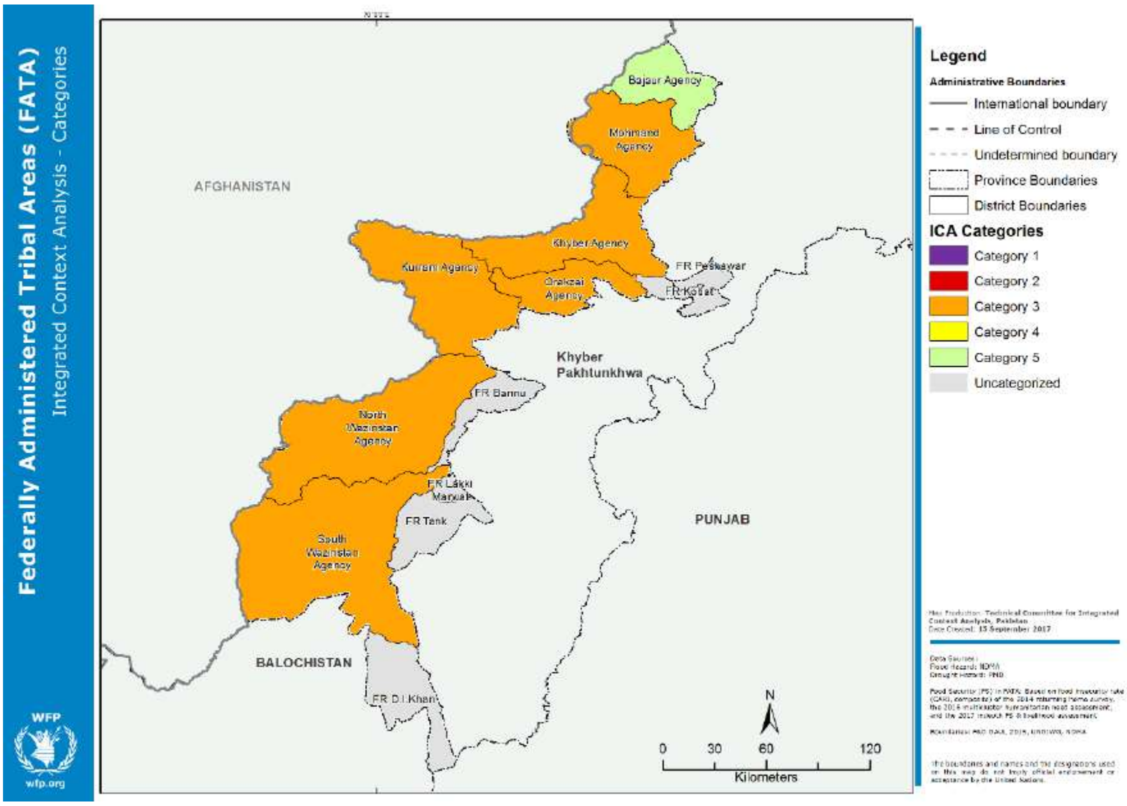
Methodology

ICA categorises the country's districts into Categories 1 to 5 based on their levels of recurring vulnerability to food insecurity and combined natural hazard. This is done by combining ICA Areas to form five Categories as shown in the table below. The ICA Categories and Areas provide evidence for broad programmatic strategies.

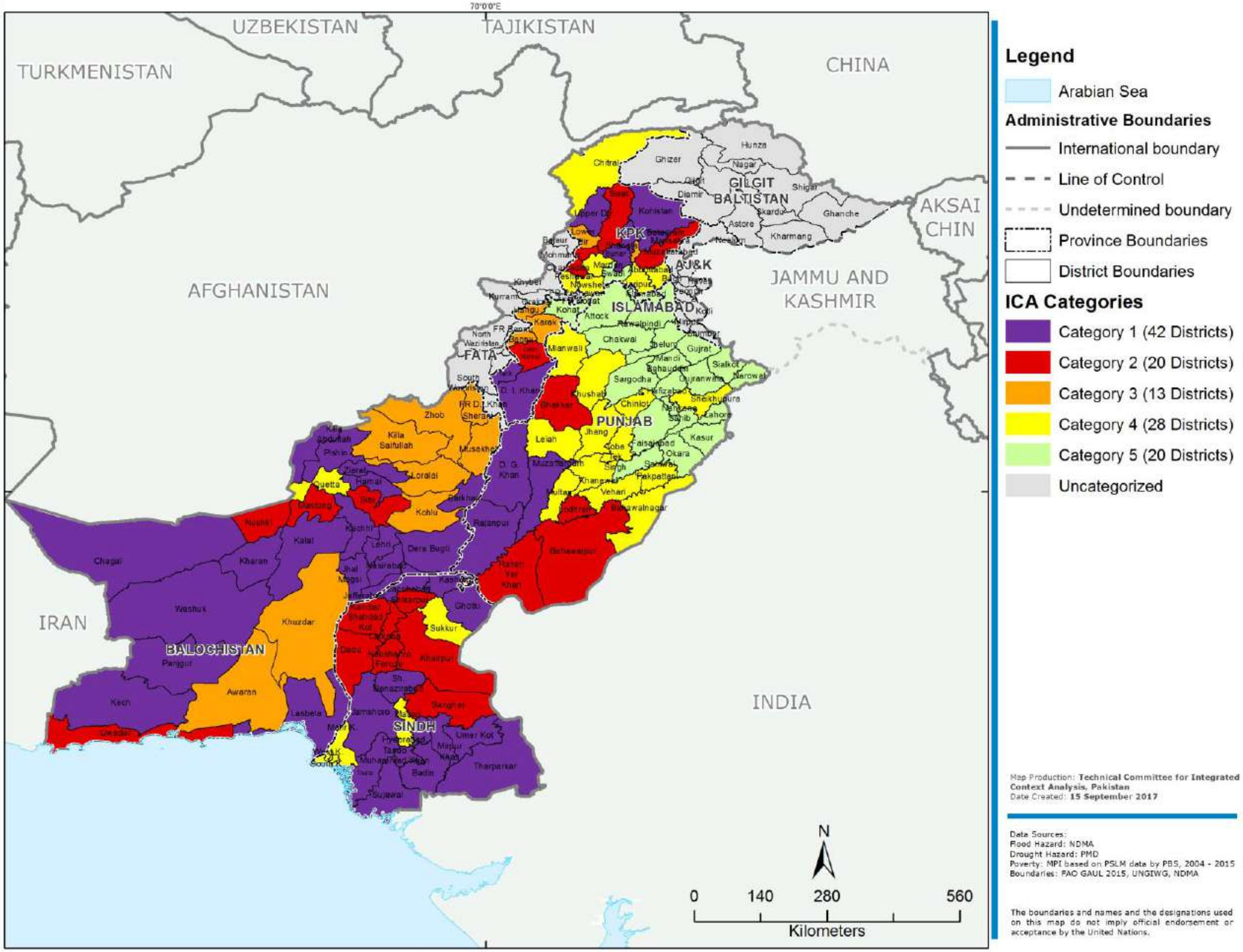
Combined level of natural hazards	Recurrence of vulnerability to food insecurity above threshold: Low	Recurrence of vulnerability to food insecurity above threshold: Medium	Recurrence of vulnerability to food insecurity above threshold: High
Low	Area 5 **Category 5** Absence of long-term vulnerability to food insecurity suggest that programme themes should concentrate on DRR. This includes early warning and disaster preparedness, as well as mitigating land degradation and other risk reduction measures.	Area 3 B **Category 3** (Area 3 B and Area 3 A) Districts identified as Area 3A show persistent vulnerability to food insecurity that can justify safety nets; Area 3B districts are more likely linked to seasonal factors where safety nets may also be applicable, 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.	Area 3 A
Medium	Area 4 B **Category 4** (Area 4 B and Area 4 A) In the absence of a clear long-term vulnerability to food insecurity entry point (noting that pockets of food insecurity may exist), DRR including early warning / preparedness is a priority. Further, attention should be paid to land degradation given that this could worsen future shocks, potentially impacting food security.	Area 2 B **Category 2** (Area 2 B and Area 2 A) Intermittent vulnerability to food insecurity patterns may be related to either shocks (natural or man-made) 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.	Area 1 B **Category 1** (Area 1 B and Area 1 A) Persistent vulnerability to 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.
High	Area 4 A	Area 2 A	Area 1 A

Results

The results are presented on the following maps.



Pakistan
Integrated Context Analysis - Categories



Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Flood Hazard: NDMA
Drought Hazard: PMD
Poverty: MPI based on PSLM data by PBS, 2004 - 2015
Boundaries: FAO GAUL 2015, UNGIWG, NDMA

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6. ICA Lenses

Beside flood and drought (Core Dimensions) other natural hazards are considered as ICA lenses. Lenses provide information to refine broad programmatic strategies by overlaying each lens on top of the ICA Areas. For example, the landslide hazard lens can be used to pinpoint areas where landslide hazard needs to be addressed through DRR programming.

Landslide Hazard

Data Selection

Landslide data is obtained from the NDMA in the form of a landslide hazard index. The dataset is based on the number of recorded landslide events from 1950 until 2015, and the physical vulnerability to landslides (slope, soil type, mean annual rainfall). The original dataset is a 5-point scale of hazard levels ranging from very low to very high.

Results

On top of the ICA Areas, high & very high levels of landslide hazard are mapped in order to highlight areas where landslides present an additional natural shock.

GLOF Hazard

Data Selection

Glacial Lake Outburst Flood (GLOF) data is obtained from the NDMA in the form of a hazard index. The dataset is based on the number of glacial lakes from 1950 to 2015. The original dataset is a 5-point scale of hazard levels ranging from very low to very high.

Results

On top of the ICA Areas, high & very high levels of GLOF hazard are mapped in order to highlight areas where this hazard presents an additional natural shock.

Limitations

It should be noted that the hazard is not based on historical record of events given their relatively rare occurrence. However, it effectively captures the areas likely to be affected due to climate change leading to the formation of glacial lakes or glacier melting.

Earthquake Hazard

Data Selection

Earthquake hazard data is obtained from the NDMA in the form of an earthquake hazard index. The dataset is based on seismic zoning as well as the number of recorded earthquake epicentres with a magnitude greater than 4 between 1905 and 2015 recorded by PMD. The dataset is a 5-point scale of hazard levels ranging from very low to very high.

Results

On top of the ICA Areas, high & very high levels of earthquake hazards are mapped in order to highlight where earthquakes present an additional natural shock.

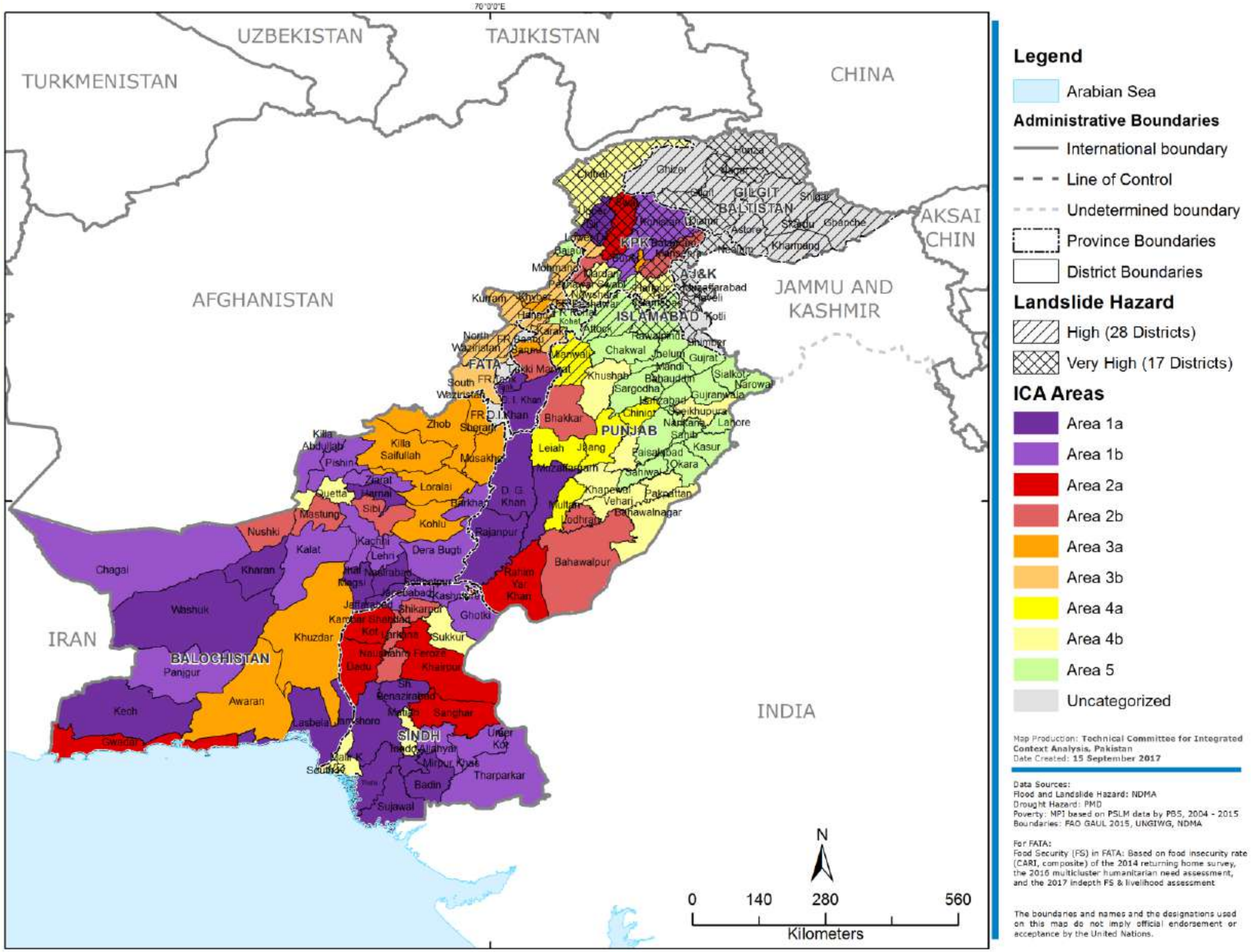
Limitation

It should be noted that both instrumentation and the scale used for measuring the intensity of earthquakes have changed over time resulting into possible variations due to conversions and standardizations.

Pakistan

Integrated Context Analysis - Areas

High & Very High Landslide Hazard



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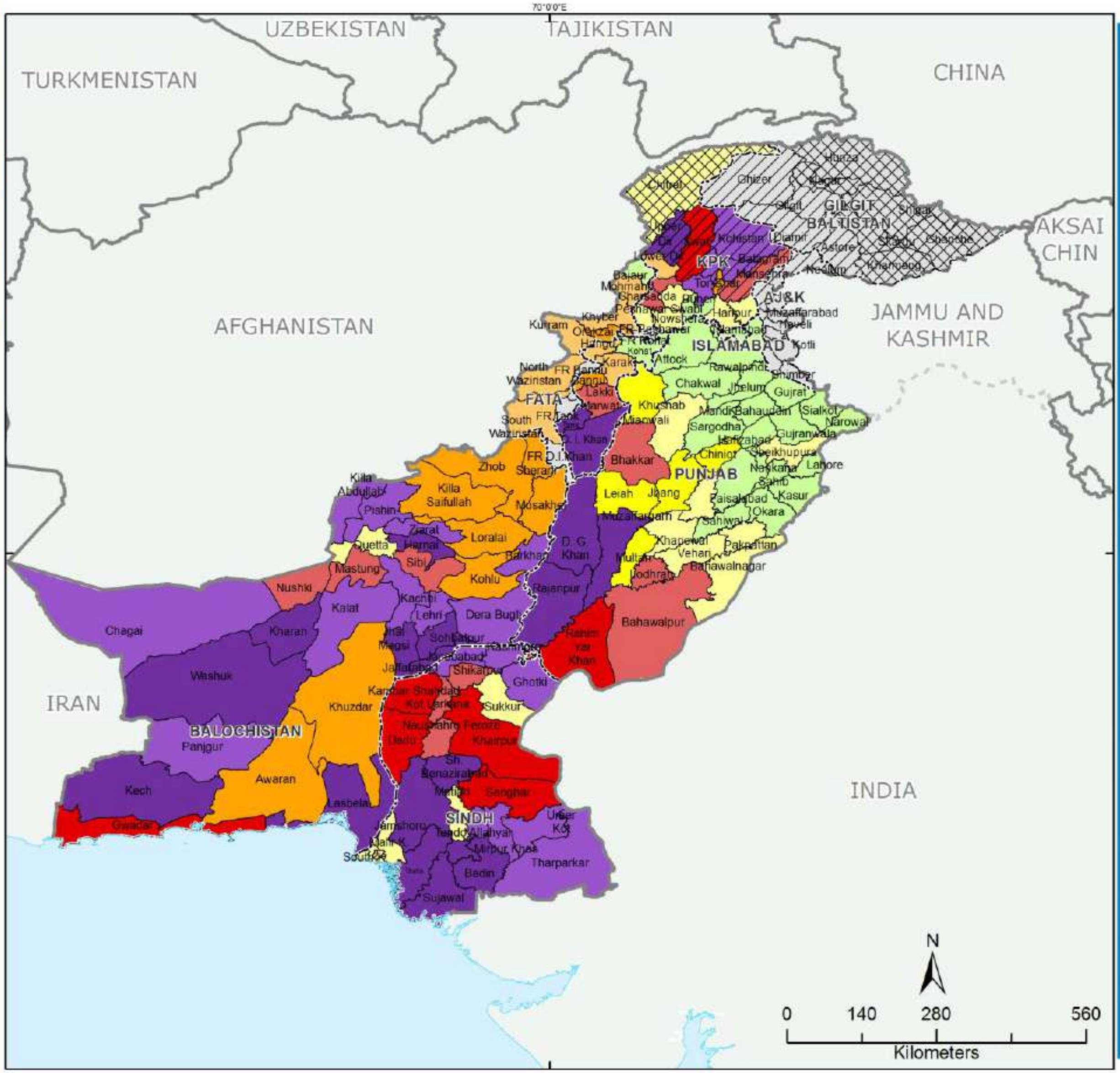
Pakistan

Integrated Context Analysis - Areas

High & Very High GLOF Hazard



Legend

Arabian Sea

Administrative Boundaries

International boundary

Line of Control

Undetermined boundary

Province Boundaries

District Boundaries

GLOF Hazard

High (13 Districts)

Very High (7 Districts)

ICA Areas

Area 1a

Area 1b

Area 2a

Area 2b

Area 3a

Area 3b

Area 4a

Area 4b

Area 5

Uncategorized

Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Flood & GLOF Hazard: NDMA
Drought Hazard: PMD
Poverty: MPI based on PSLM data by PBS, 2004 - 2015
Boundaries: FAO GAUL 2015, UNGIWG, NDMA

For FATA:
Food Security (FS) in FATA: Based on food insecurity rate (CARI, composite) of the 2014 returning home survey, the 2016 multicluster humanitarian need assessment, and the 2017 indepth FS & livelihood assessment

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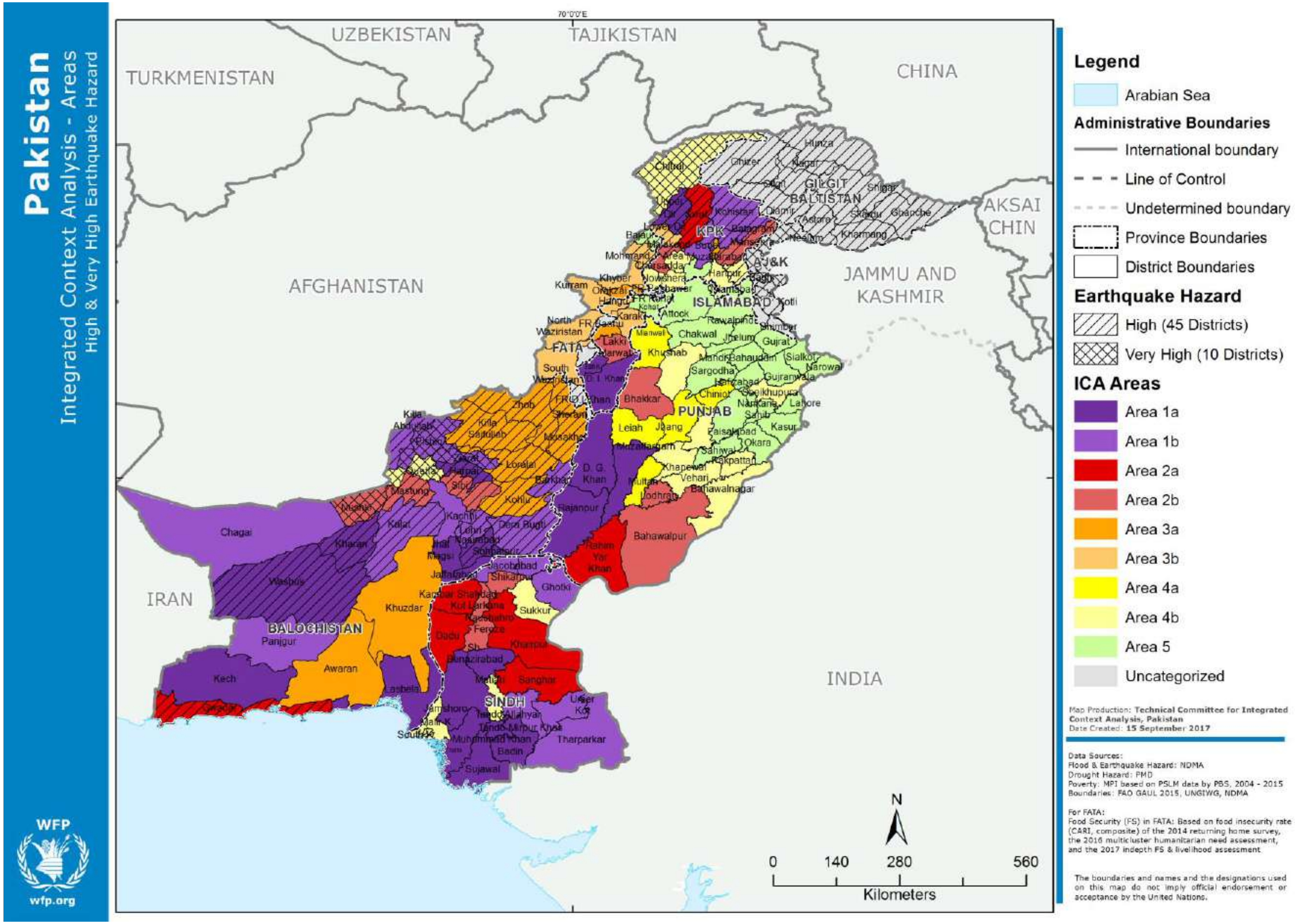
Pakistan
Integrated Context Analysis - Areas
High & Very High Earthquake Hazard
70°0'0"E
UZBEKISTAN
TAJIKISTAN
TURKMENISTAN
CHINA
AKSAI CHIN
AFGHANISTAN
JAMMU AND KASHMIR
IRAN
INDIA
BALOCHISTAN
PUNJAB
SINDH
KPK
FATA
ISLAMABAD
GILGIT BALTISTAN
J&K
0 140 280 560
Kilometers
N
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Earthquake Hazard
High (45 Districts)
Very High (10 Districts)
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
Map Production: Technical Committee for Integrated Context Analysis, Pakistan
Date Created: 15 September 2017
Data Sources:
Flood & Earthquake Hazard: NDMA
Drought Hazard: PMD
Poverty: MPI based on PSLM data by PBS, 2004 - 2015
Boundaries: FAO GAUL 2015, UNGIWG, NDMA
For FATA:
Food Security (FS) in FATA: Based on food insecurity rate (CARI, composite) of the 2014 returning home survey, the 2016 multicluster humanitarian need assessment, and the 2017 indepth FS & livelihood assessment
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Land Degradation

Data Selection

In the absence of national land degradation datasets, it is decided to use global proxy analyses collected by WFP HQs. The possibility of implementing the FAO methodology for Land Degradation Assessment in Drylands (LADA) was considered, but the timeline necessary for primary data collection and analysis was determined to be too lengthy for the current ICA.

Methodology

Two indicators are used as proxies to assess land degradation – the first is *negative land cover change*. This analysis is performed using remotely sensed land cover data for 1992 and 2015 from the European Space Agency (ESA), with 300m resolution. Land cover classes in the original dataset are assigned ordinal ecological values based on their relative ability to offer ecosystem services. The difference in ecological values between 1992 and 2015 is then calculated for each pixel, and values are aggregated to the district level to understand the overall trend in each district.

Second is the *soil erosion propensity* that emerges from a simplified version of the Revised Universal Soil Loss Equation (RUSLE). This methodology is widely accepted amongst the scientific community for estimating soil loss and is recognized for providing a good approximation of the real erosion dynamics in normal conditions. The analysis elaborated for the ICA considers data on rainfall incidence (WorldClim), soil lithology (FAO), land cover (NASA MODIS) and slope length (calculated in SAGA-GIS using NASA SRTM digital elevation model) to produce an estimate of potential soil loss in tons/ha per year with a spatial resolution of 500m. All soil loss of 5 tons/ha per year or greater is considered as significant, as it is possible for soil loss below this rate to be replenished through natural soil generation. The percentage of surface area in each district that experiences this level of erosion propensity is calculated.

The percentage of surface area where erosion is estimated to be 5 tons/ha per year or greater is calculated, and the distribution of values classified according to **Jenks Natural Breaks** as follows: Low (< 20%), Medium (20 – 34.9%), High (35 – 50%) and Very High (> 50%). The three highest classes were mapped given that they represent districts where the percentage of area affected is more or less greater than the national extent of erosion-affected areas[4].

Results

On top of the ICA Areas, negative ecological change are mapped, as well as those with an extent of erosion-prone surface area greater than the national extent (roughly 20%).

The final map highlights where these different land degradation problems are present and where they coincide.

Limitations

It should be noted that the two datasets considered do not capture all types of land degradation (e.g. salinization, soil fertility decline, etc.). The negative land cover change is a proxy for vegetation loss and decline in ecosystem function, but yields only qualitative dimensional results. Furthermore, it assigns values to certain land cover classes which should be locally verified. Lastly, the resolution of the data limits its ability to capture small-scale changes.

The soil erosion propensity analysis is likewise limited in its resolution of 500m. Moreover, the analysis provides only an estimate of the **potential** soil loss, in tons/ha per year, since data on the protective factor (i.e. the effect of mitigating infrastructure which reduces soil loss) is not available.

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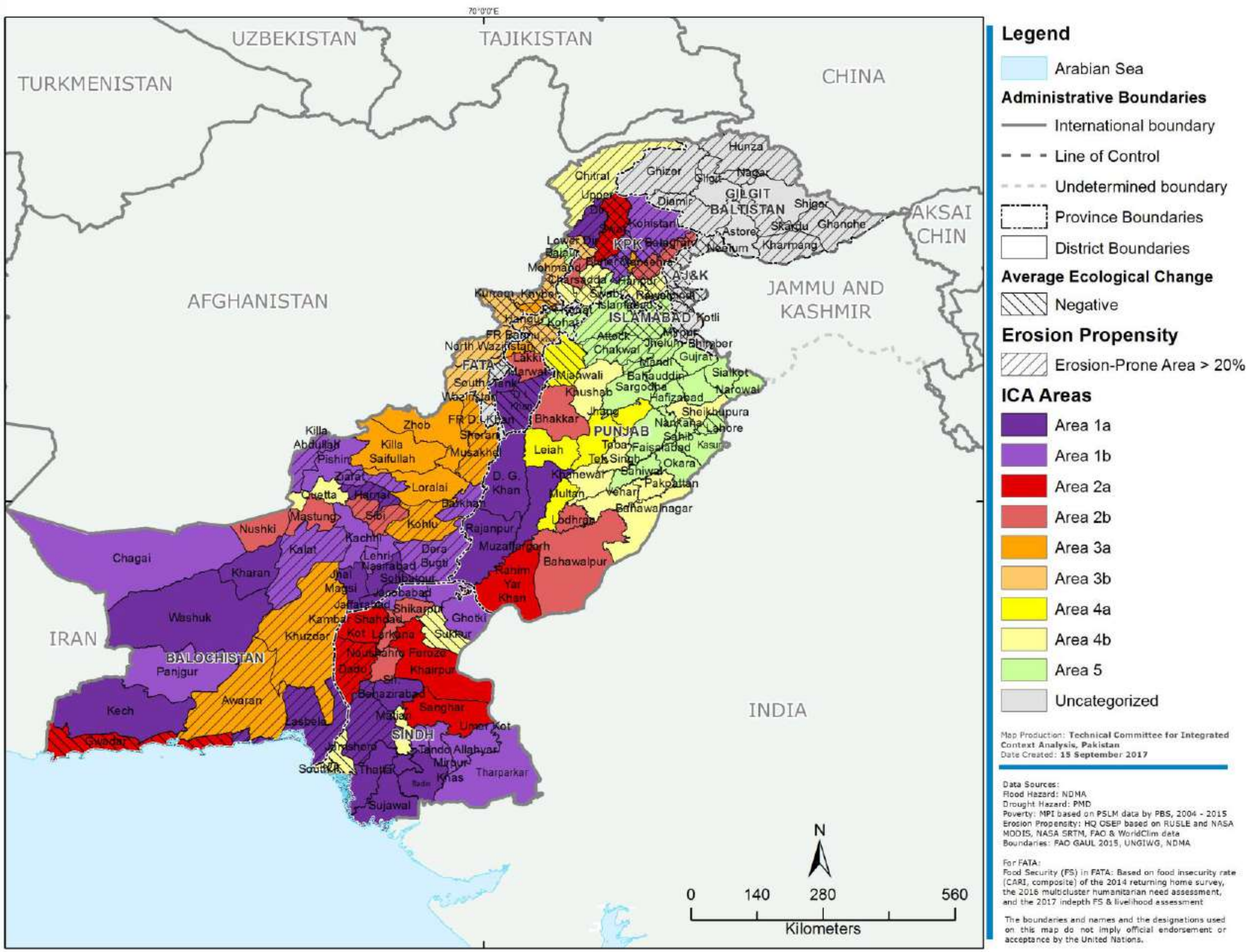
[4] FAO, UNDP & UNEP (1994); Shah & Arshad (2006). Land Degradation in Pakistan: A Serious Threat to Environments and Economic Sustainability. Retrieved from

Pakistan

Integrated Context Analysis - Areas

Erosion-Prone Surface Area & Negative Ecological Changes



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7. Additional Contextual Information

The maps and charts in this section provide additional contextual information related to livelihood activities and population, which can help in further refining the broad programmatic strategies using additional details.

Population Density

Data Selection
Population density from the Landscan global dataset 2015 is used.

Results
Population density greater than 10 persons per square kilometre is overlaid on ICA Areas to highlight districts with relatively higher population density.

Limitations
It should be noted that the LandScan is a global dataset that estimates the likely distribution of population based on land cover, roads, slope, village locations, etc. It is therefore not based on actual population census data.

Dominant Land Cover

Data Selection

In the absence of complete and updated livelihood zoning information, an understanding of dominant land cover can highlight important areas for agriculture (and potentially pastoralism). This helps to contextualize how natural hazards may impact households and can help identify programming interventions.

Given that the current ICA is performed using the district as the unit of analysis, it is decided to identify two dominant land cover class to make the results easier for comparison with ICA Categories and other results. The land cover used is sourced from ESA GlobeCover 2009 and analysed by FAO Pakistan. The original dataset of land cover with 300m resolution is mapped as shown in the map below.

Detailed land cover classification data for four provinces of Pakistan is also available from SUPARCO Pakistan and utilized for triangulation, but due to the unavailability of the data for the whole country, ESA GlobeCover 2009 is used for the ICA.

Methodology
Spatial calculations are performed to obtain the area under each land cover class for each district. Based on the results, land cover classes are ranked, and the first and second most dominant land cover classes are identified (i.e. the classes covering the largest areas in each district). The combinations of two most dominant land cover classes are simplified and grouped to make the map more user-friendly, and to highlight key combinations of importance (presence of irrigated and/or rainfed croplands)

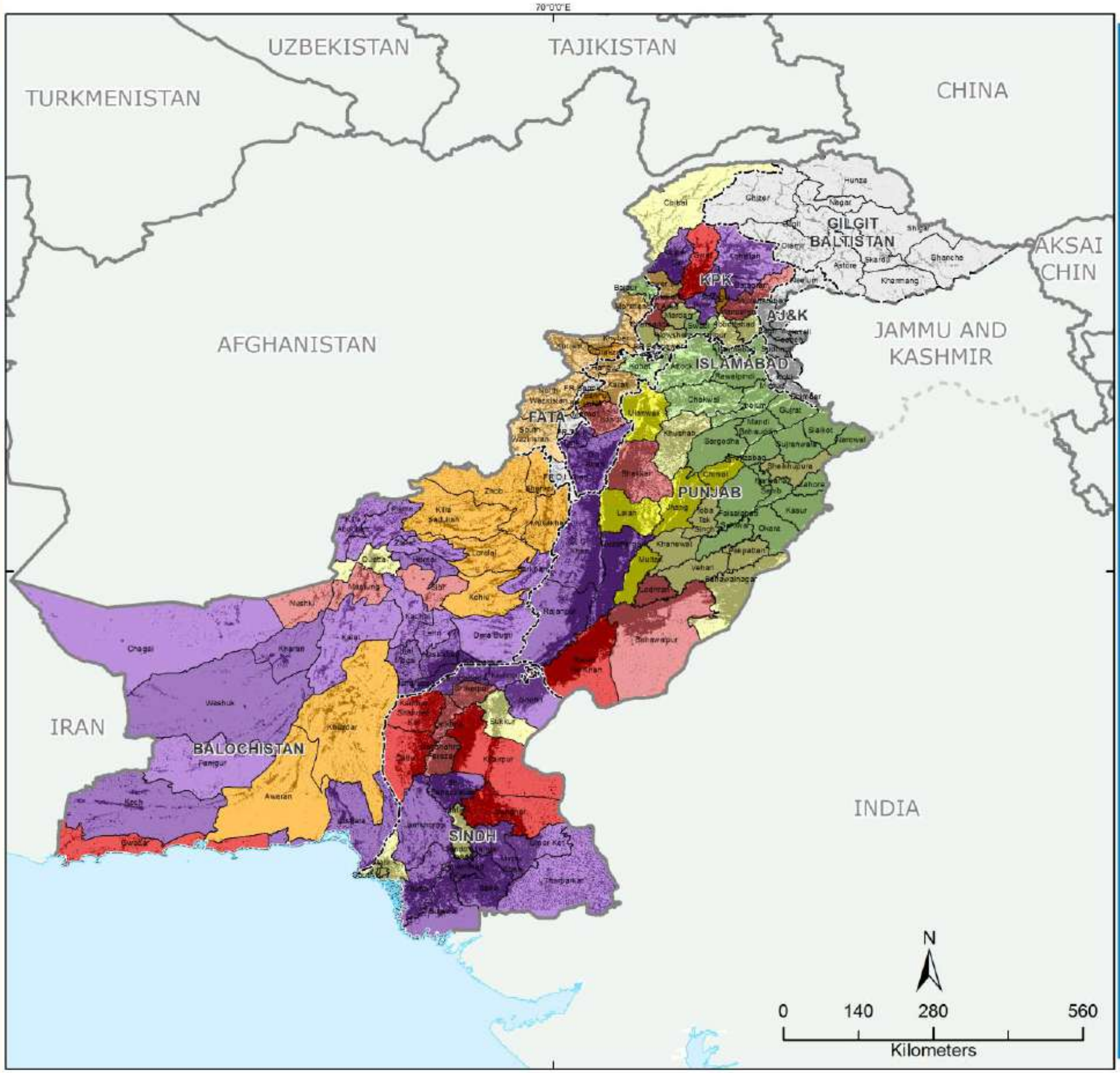
Results
Two most dominant land cover classes by district are shown in the map below.

Limitations
It should be noted that the analysis does not consider the order of the two most dominant land cover classes, in order to produce a simpler and more user-friendly map. Furthermore, it should be considered that many other factors (e.g. size of land-ownings) influence livelihoods, in addition to the land cover/land use type.

Pakistan

Integrated Context Analysis - Areas

Population Density > 10 persons/km²



Legend

Arabian Sea

Administrative Boundaries

- International boundary
- Line of Control
- Undetermined boundary
- Province Boundaries
- District Boundaries

ICA Areas

- Area 1a
- Area 1b
- Area 2a
- Area 2b
- Area 3a
- Area 3b
- Area 4a
- Area 4b
- Area 5
- Uncategorized

Shaded areas indicate where population density is greater than 10 persons per km².

Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Flood Hazard: NDMA
Drought Hazard: PMD
Poverty: MPI based on PSLM data by PBS, 2004 - 2015
Population Density: LandScan 2015
Boundaries: FAO GAUL 2015, UNGIWG, NDMA

For FATA:
Food Security (FS) in FATA: Based on food insecurity rate (CARI, composite) of the 2014 returning home survey, the 2016 multicluster humanitarian need assessment, and the 2017 indepth FS & livelihood assessment

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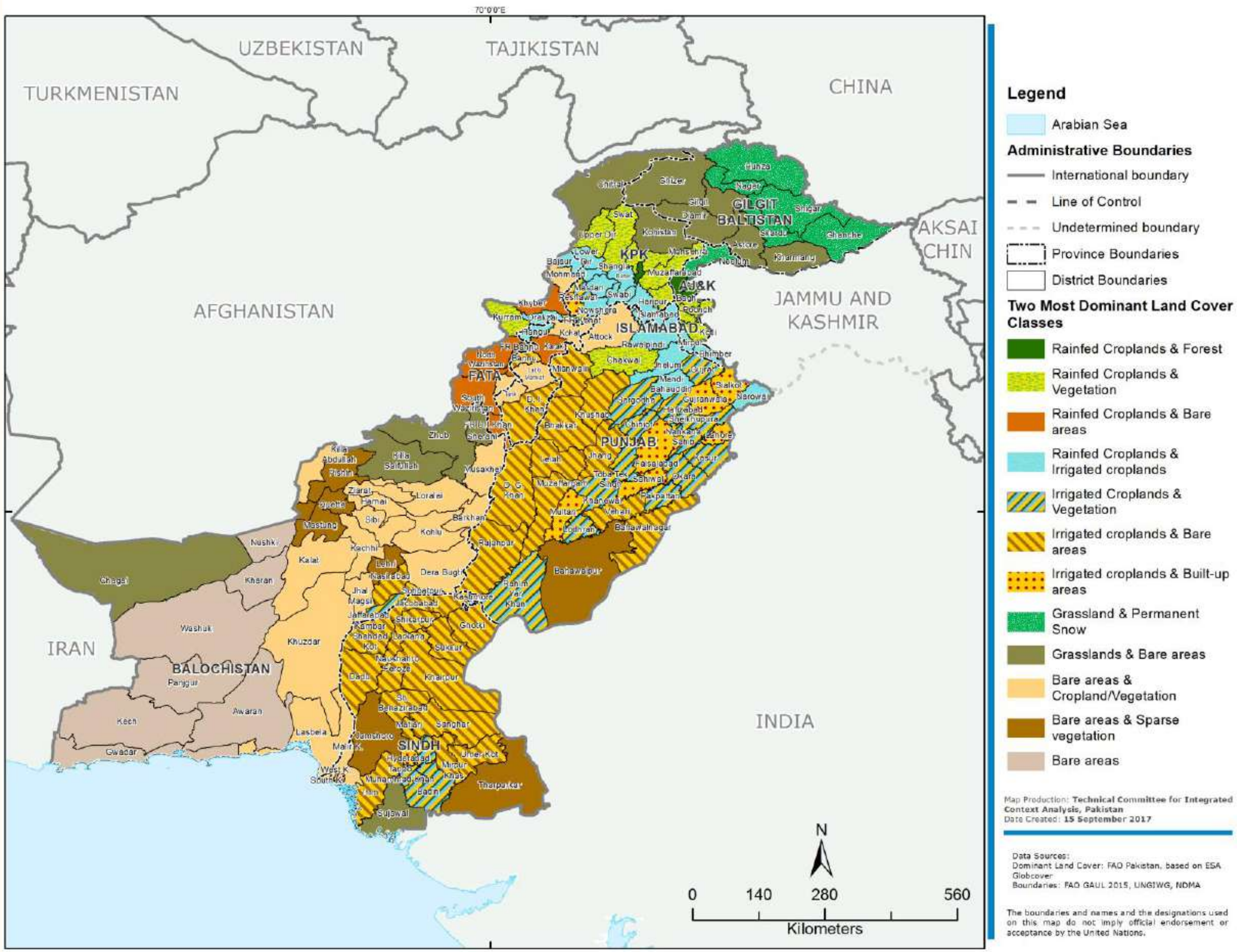
Pakistan

Two Most Dominant Land Cover Classes



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8. Estimated Numbers of People Vulnerable to Food Insecurity

A broad understanding of the estimated number of people vulnerable to food insecurity in the past reference period would help in preparedness planning and programming relevant responses.

Analysis of Four Provinces

Data Selection

To calculate, number of people vulnerable to food insecurity was estimated from 2004/05 to 2014/15 using the MPI (incidence and intensity). Population figures were obtained for the years corresponding to each round of MPI, from the Provincial Bureaux of Statistics.

The lowest numbers (in yellow) and the highest numbers (in red) are highlighted:

Estimated Population Vulnerable to Food Insecurity from 2004 to 2015					
2004/05	2006/07	2008/09	2010/11	2012/13	2014/15
41,612,849	41,886,595	41,271,435	38,097,610	36,419,188	36,452,918

Methodology

The overall average of number of people estimated as vulnerable to food insecurity over the last twelve years (39,290,099) is calculated to provide an idea of the historical situation. Given that the numbers of multi-dimensionally poor people, i.e. people vulnerable to food insecurity, have not varied much over this period (there has been a decrease of about 5 million), the average gives a broad indication of the vulnerable population in the country.

In Pakistan, there has consistently been a certain number of people who are multi-dimensionally poor and thus vulnerable to food insecurity, irrespective of improvements in MPI indicators in the last twelve years. To estimate population in this category, the average of the two lowest figures recorded over the recall period (36,436,053) is calculated. For planning purposes, this figure can reflect an estimate of those *chronically vulnerable* to food insecurity.

The difference between the averages of the two highest figures recorded over the recall period (41,749,722) and the overall average above reflects the estimated number of *additional* people who were multi-dimensionally poor should some MPI dimensions significantly deteriorated (2,459,623). This number of people can provide a rough figure for preparedness planning in case of a relatively normal fluctuation or deterioration of MPI dimensions, but is not meant as a forecast for a defined period in the future.

Limitations

It should be noted that these figures encompass only the population of four provinces where the PLMS was conducted, and does not include the population in AJK, FATA or Gilgit Baltistan. Furthermore, the figures presented refer to people vulnerable to food insecurity as opposed to food insecure population, given the use of the MPI as a proxy for food insecurity.

The ICA is not intended to be a statistical analysis and hence, its estimation methods and figures should be simple, easily understood by non-statisticians/non-technical people. In the interest of keeping the analysis simple, the ICA applies a simple averaging technique to calculate the overall long-term average of all historical datasets.

It should also be noted that the analysis of historical averages may not necessarily provide precise future estimates of people vulnerable to food insecurity, as there have been clear declining trends witnessed at the national level and in Punjab province, This unusual trend in ICA Pakistan had been noted well by the analysts which is mostly due to the fact that because of lacking a direct food security outcome indicator (e.g. Prevalence of Undernourishment), the MPI – a proxy on vulnerability to food insecurity is used here.

As widely recognized, the relationship of natural hazards with poverty is not as strong as with food insecurity.

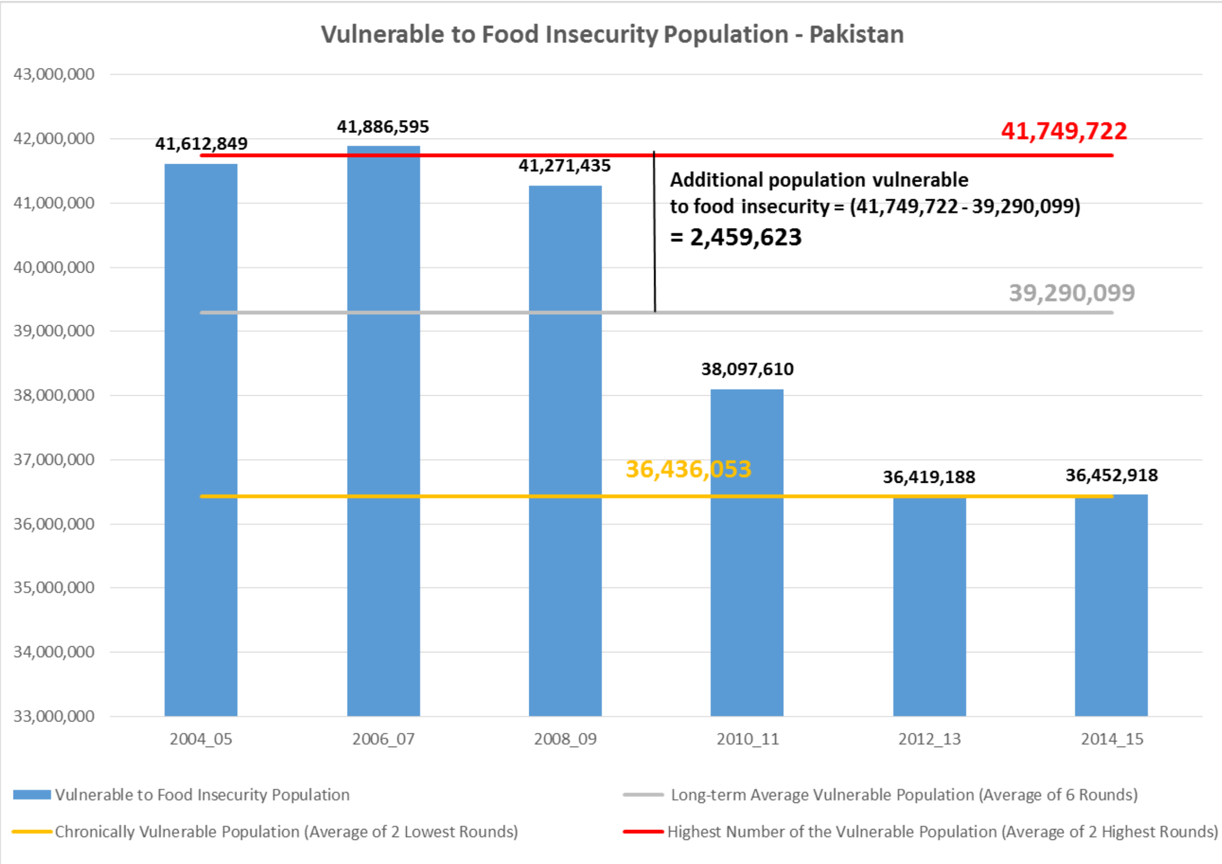
Results

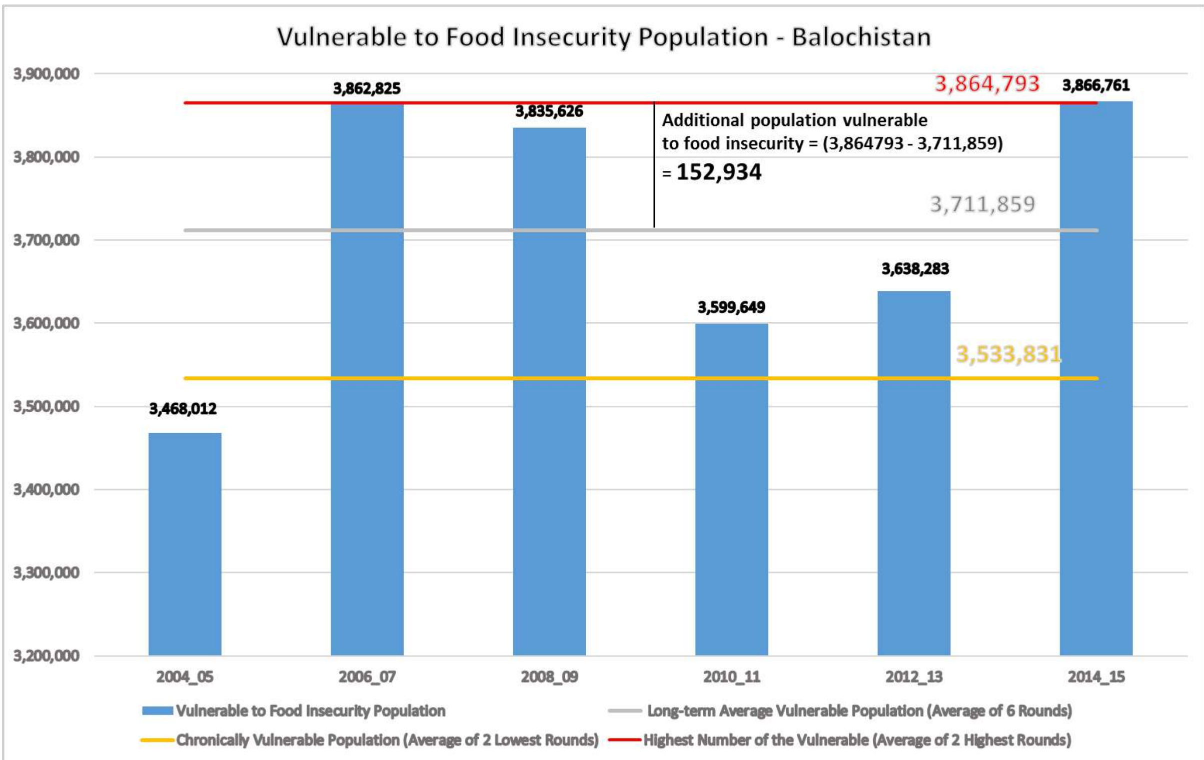
In summary, planning estimates are as follows:

Long-term average: average number of population vulnerable to food insecurity from 2004 to 2015	**39,290,099**
Chronically vulnerable: *of the above*, estimated number of people chronically vulnerable to food insecurity	**36,436,053**
In case of deterioration of MPI dimensions: estimated number of people who were vulnerable to food insecurity when some MPI dimensions significantly deteriorated	41,749,722
Preparedness planning: *in addition to the above long-term average number,* additional number of people vulnerable to food insecurity when some of the MPI dimensions significantly deteriorated	**2,459,623**

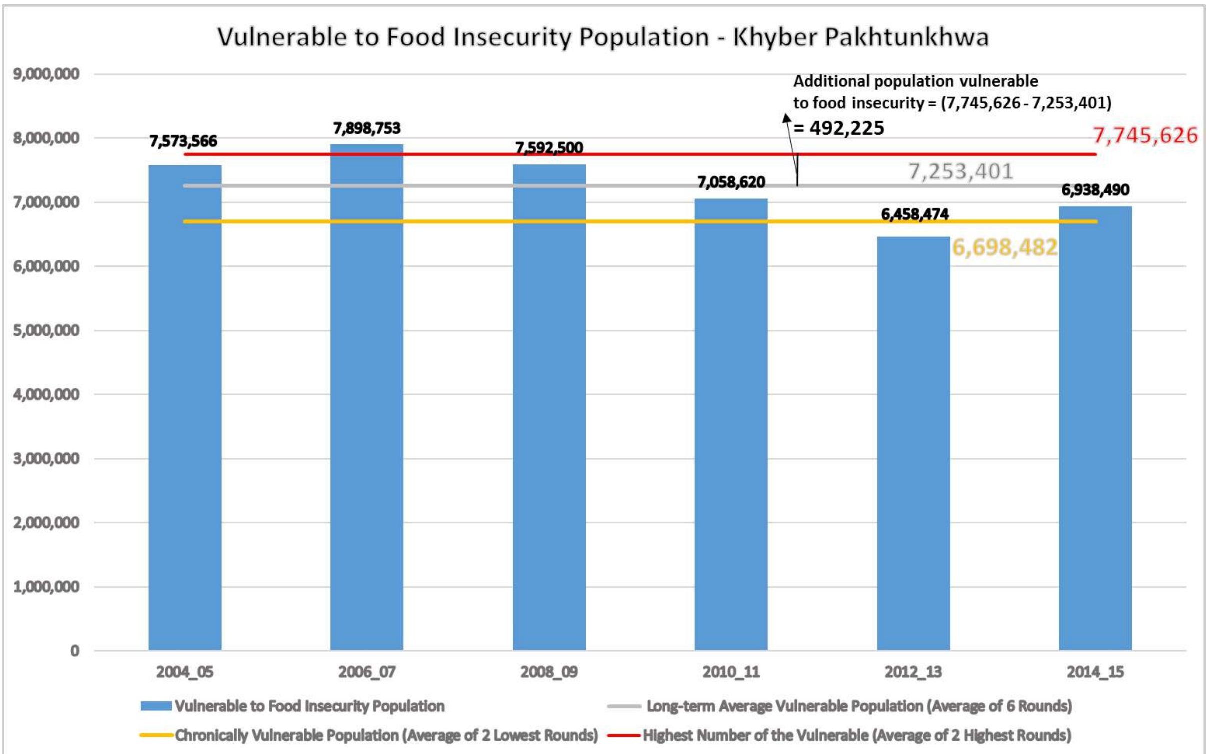
It is essential to note that these are just planning estimates and that actual numbers should be derived from emergency assessments in the event of a crisis and that plans should be adjusted throughout the programming cycle based on future assessments that reflect the current situation.

The results are also presented as histogram below.

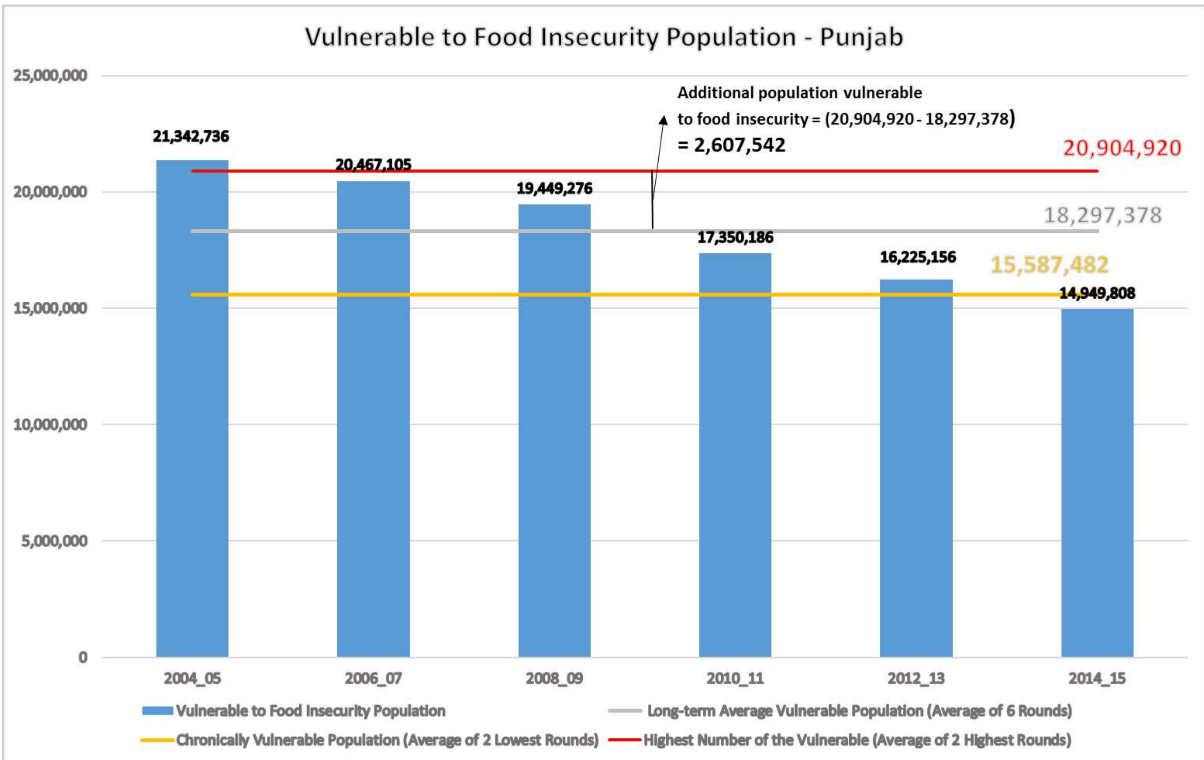




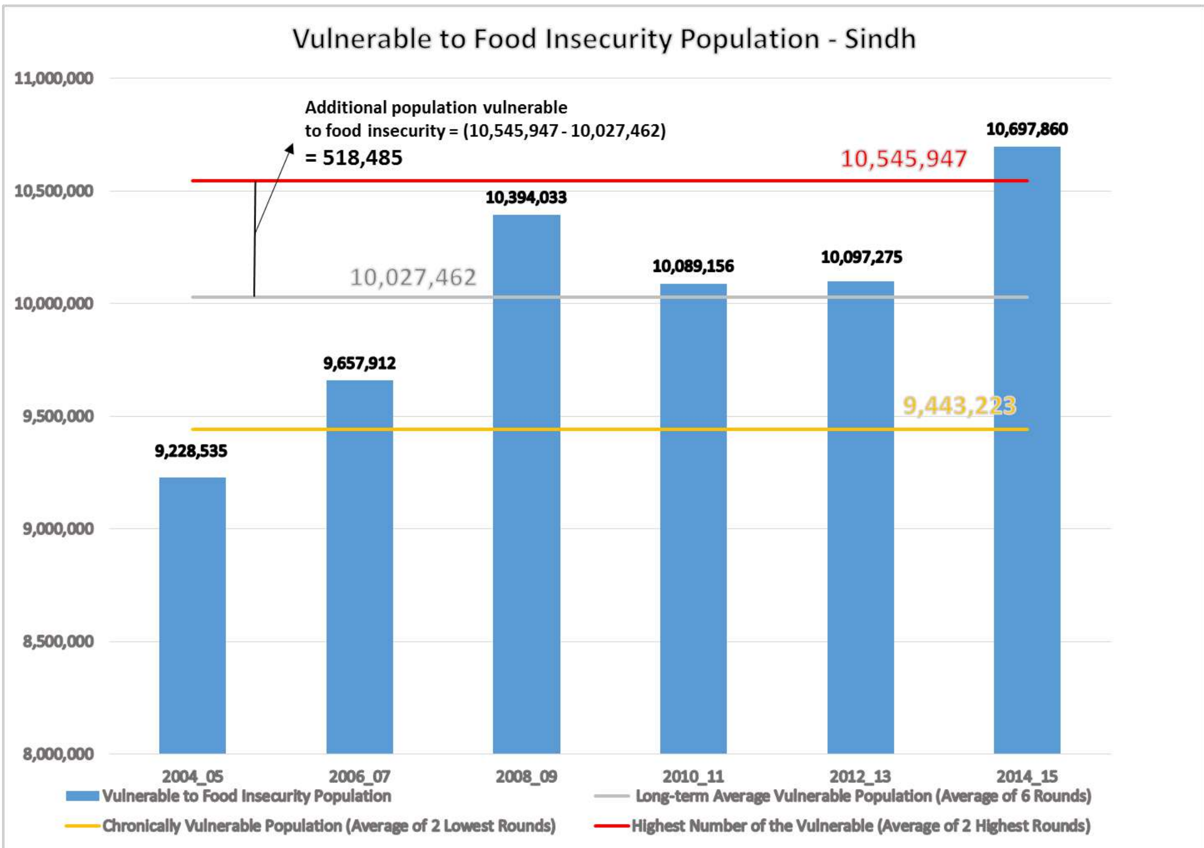
Vulnerable to Food Insecurity Population - Balochistan
3,900,000
3,800,000
3,700,000
3,600,000
3,500,000
3,400,000
3,300,000
3,200,000
3,468,012
3,862,825
3,835,626
3,599,649
3,638,283
3,866,761
3,864,793
Additional population vulnerable to food insecurity = (3,864793 - 3,711,859)
= 152,934
3,711,859
3,533,831
2004_05
2006_07
2008_09
2010_11
2012_13
2014_15
Vulnerable to Food Insecurity Population
Long-term Average Vulnerable Population (Average of 6 Rounds)
Chronically Vulnerable Population (Average of 2 Lowest Rounds)
Highest Number of the Vulnerable (Average of 2 Highest Rounds)



Vulnerable to Food Insecurity Population - Khyber Pakhtunkhwa
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
7,573,566
7,898,753
7,592,500
7,058,620
6,458,474
6,938,490
Additional population vulnerable to food insecurity = (7,745,626 - 7,253,401)
= 492,225
7,745,626
7,253,401
6,698,482
2004_05
2006_07
2008_09
2010_11
2012_13
2014_15
Vulnerable to Food Insecurity Population
Long-term Average Vulnerable Population (Average of 6 Rounds)
Chronically Vulnerable Population (Average of 2 Lowest Rounds)
Highest Number of the Vulnerable (Average of 2 Highest Rounds)



Vulnerable to Food Insecurity Population - Punjab
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
0
Additional population vulnerable
to food insecurity = (20,904,920 - 18,297,378)
= 2,607,542
21,342,736
20,467,105
19,449,276
17,350,186
16,225,156
14,949,808
20,904,920
18,297,378
15,587,482
2004_05
2006_07
2008_09
2010_11
2012_13
2014_15
Vulnerable to Food Insecurity Population
Long-term Average Vulnerable Population (Average of 6 Rounds)
Chronically Vulnerable Population (Average of 2 Lowest Rounds)
Highest Number of the Vulnerable (Average of 2 Highest Rounds)



Vulnerable to Food Insecurity Population - Sindh
11,000,000
10,500,000
10,000,000
9,500,000
9,000,000
8,500,000
8,000,000
Additional population vulnerable
to food insecurity = (10,545,947 - 10,027,462)
= 518,485
10,545,947
10,697,860
10,394,033
10,089,156
10,097,275
10,027,462
9,657,912
9,443,223
9,228,535
2004_05
2006_07
2008_09
2010_11
2012_13
2014_15
Vulnerable to Food Insecurity Population
Long-term Average Vulnerable Population (Average of 6 Rounds)
Chronically Vulnerable Population (Average of 2 Lowest Rounds)
Highest Number of the Vulnerable (Average of 2 Highest Rounds)

Analysis of FATA

Data Selection

In case of FATA, the number of food insecure people was estimated for seven Agencies using the available data on composite food insecurity rates and population estimates for the corresponding years.

The lowest number (in yellow) and the highest number (in red) are highlighted in table below:

Estimated food insecure population from 2014 to 2017		
2014	2016	2017
1,624,893	1,584,103	890,413

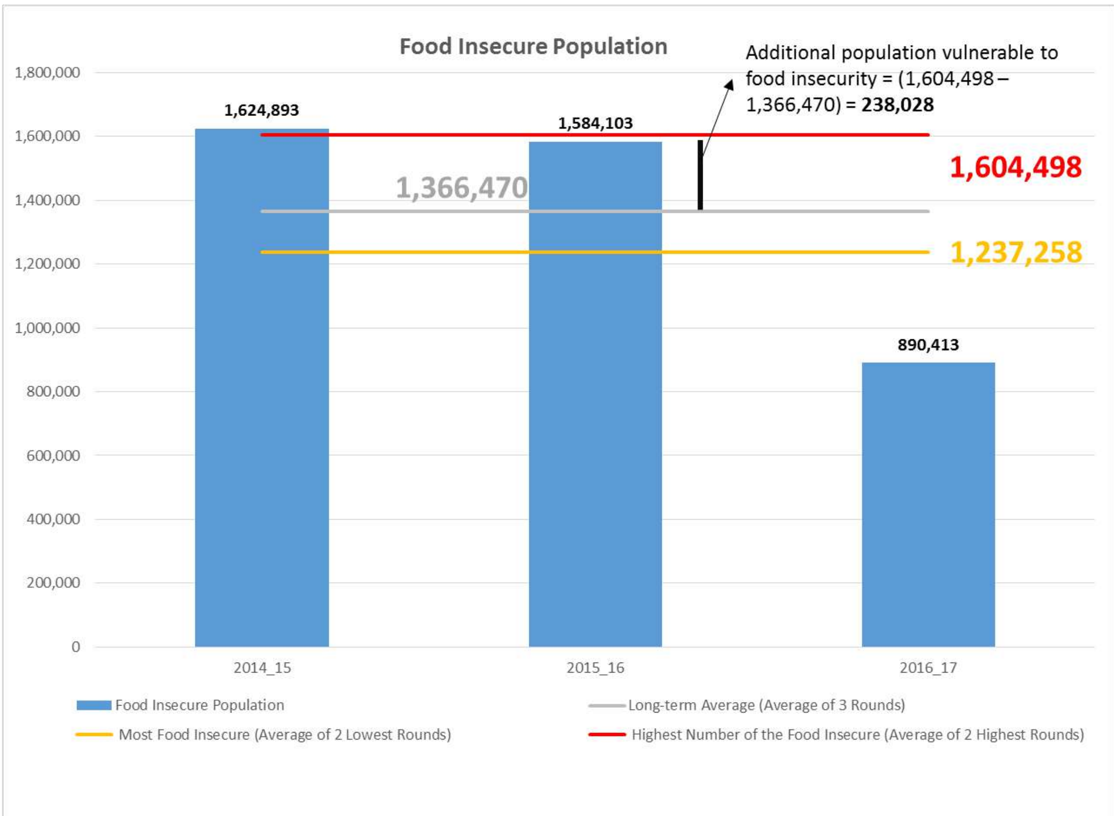
Limitations

It should be noted that the surveys only included returned households, and that for some agencies data was not available for all three rounds. Furthermore, as previously mentioned, the use of only three datasets provides a limited pool of data rounds from which to draw conclusions, and covers only a very limited timeframe. As mentioned for the population analysis done at national level, the figures are a reflection of historical data only, and may not reflect current and future trends in poverty reduction

Results

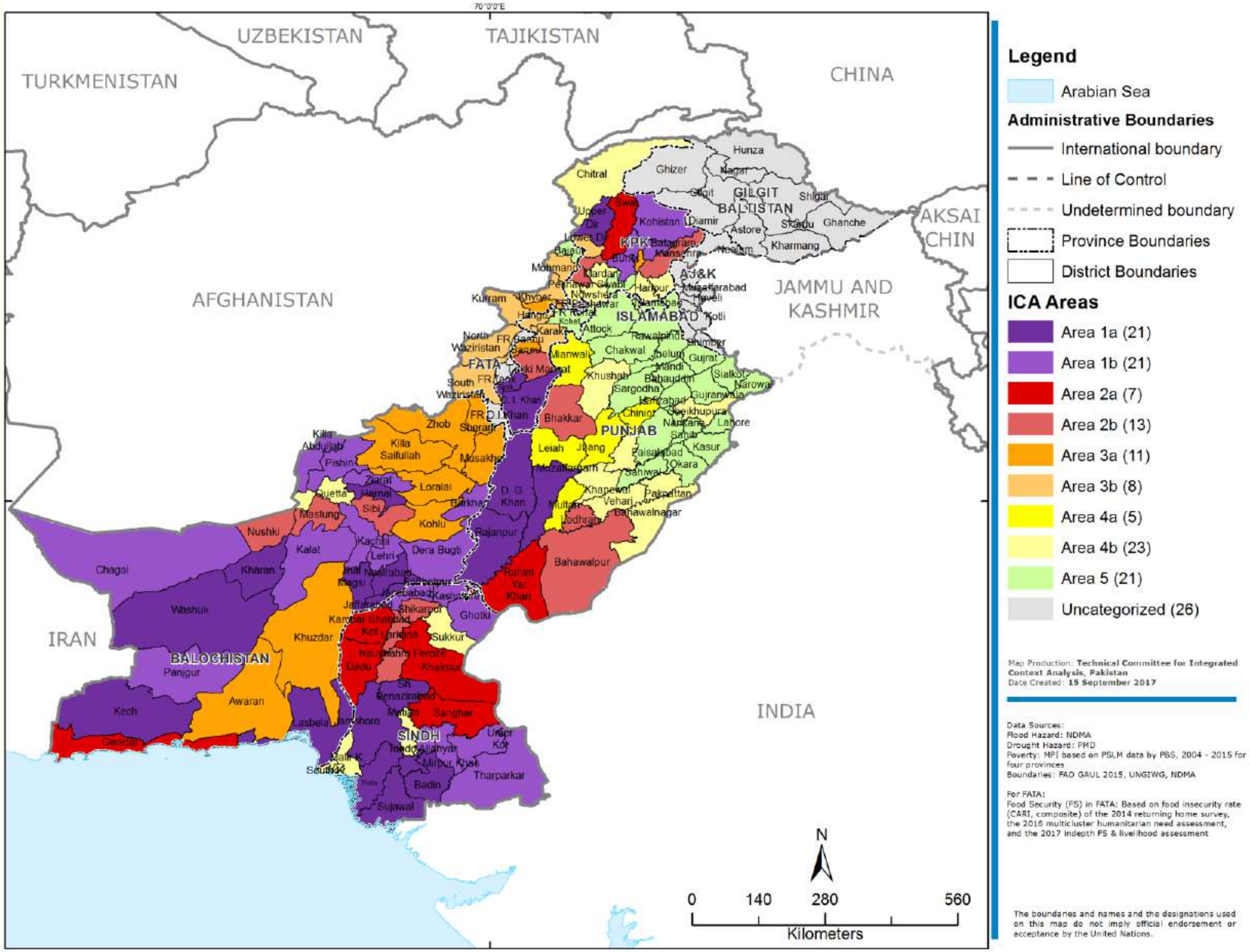
Planning estimates, calculated using the same methodology as for the national results, would be as follows:

Long-term average: average number of food insecure people over the last 3 years	**1,366,470**
Chronically food insecure: *of the above*, estimated number of chronically food insecure people	**1,237,258**
In case of a shock: estimated number of people who were food insecure in a bad year	1,604,498
Preparedness planning: *in addition to the above,* additional number of food insecure people when a major shock occurred (be it natural or man-made)	**238,028**



Part - II:
Programmatic Recommendations

Pakistan
Integrated Context Analysis - Areas

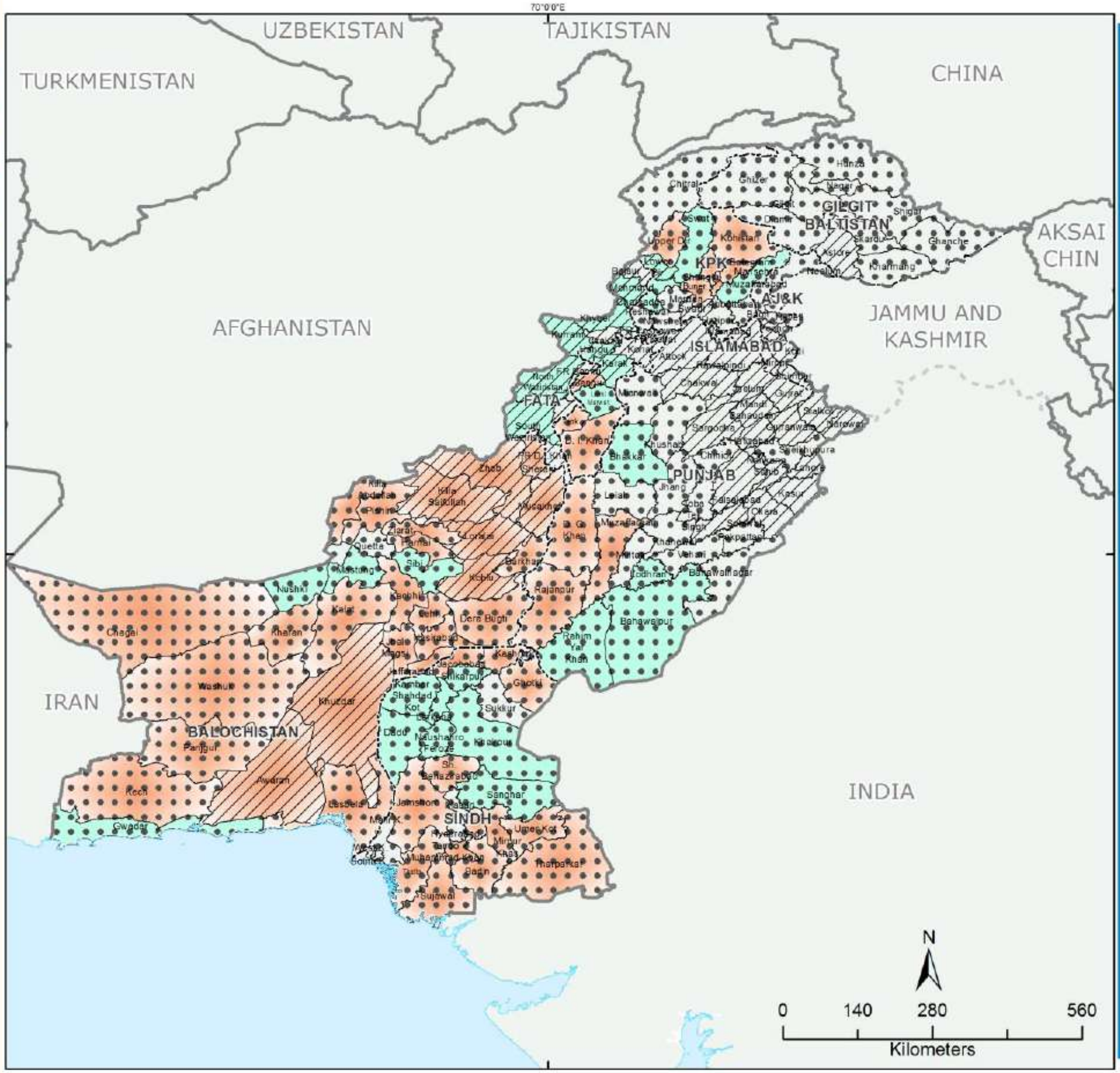


WFP
wfp.org

Pakistan

Integrated Context Analysis

Broad Programmatic Recommendations



Legend

Arabian Sea

Administrative Boundaries

International boundary

Line of Control

Undetermined boundary

Province Boundaries

District Boundaries

Broad Programmatic Recommendations

Broad DRR

Early warning and disaster preparedness

Flexible food security safety nets or livelihood recovery

Year round food security safety nets

Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Programmatic Recommendations: National consultations based on Technical Findings of ICA 2017

Boundaries: FAO GAUL 2015, UNGIWG, NDMA

WFP

wfp.org

9. ICA Programmatic Implication

Aim of ICA is to help identify areas where broad long-term programmatic strategies to support food insecure and vulnerable population are to be positioned. These will complement and protect the underlying long-term development trajectory present in a country. It informs where to focus 'geographically' different combinations of selected programmatic themes aiming to lift the most vulnerable out of food insecurity, reduce the risks from climate-related natural shocks, protect development gains and enable further progress. The ICA advocates tailoring support linking humanitarian and development efforts in ways that make the most sense according to unique geographical contexts.

ICA uses a consultative process with partners, firstly to validate the technical findings followed by discussions to identify the most appropriate, broad programmatic strategies in specific geographical areas, including where to position safety nets, disaster risk reduction (DRR), early warning and preparedness. These involve local partner consultations and participation in the analytical and interpretative processes so that findings reflect collective knowledge and experience. As part of the Three-Pronged Approach (3PA), which strengthens the design, planning and implementation of longer-term and emergency programmes, ICA also indicates where to conduct Seasonal Livelihood Programming (SLP) consultations to populate the broad ICA programmatic strategies with specific activities and which inform Community-based Participatory Planning (CBPP) processes.

This report summarises results of ICA stakeholder consultations in the country that discussed programmatic implications of the ICA findings described in Part I of this report.

10. Future Directions for ICA and Related Work in Pakistan

Launch of core ICA in Pakistan is a starting point for further efforts. ICA Steering and Technical Committees recommend and support the following actions:

1. Use of ICA to support programming decisions by the Government of Pakistan, its agencies, ministries, departments, provincial authorities, UN agencies, humanitarian and development actors including international and national NGOs.
2. NDMA, WFP and relevant partners to further collaborate in planning and implementing Seasonal Livelihood Programming (SLP) in identified more vulnerable districts of Pakistan. SLP should accrue strong engagement and commitment from other national, provincial and international actors. It will help specify strategic themes identified in ICA with concrete activities by spelling out who is doing what, when, where and how – in terms of both livelihood and food security interventions in targeted districts.
3. NDMA and WFP to explore and plan implementation of ICA+ to analyse additional stressors related to livelihood, nutrition, climate change and capabilities or resources required. Subject to data availability, ICA+ will provide additional data layers to be overlaid on Areas/Categories of ICA 2017. ICA+ will provide further information to broaden and refine programme themes, prioritise potential work and advocate additional resources needed.
4. NDMA will maintain ownership of ICA and with ongoing support from WFP, will plan an update of ICA on periodic basis in 2019 and 2021 as well as, when important new data becomes available (e.g. census data, new PSLM).
5. ICA stakeholders to advocate for stronger data collection in areas where there are gaps (e.g. MPI or food security data for Gilgit Baltistan, AJ&K, FATA and Frontier Regions) so that future ICA can have full countrywide coverage.

11. Programmatic Themes Relevant to ICA

Safety Nets

A safety net is 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)

Disaster risk reduction 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

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 is intended to trigger some form of immediate action to reduce shock risk. Thus, early warning is often closely tied to preparedness, and is a component of DRR.

Preparedness

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 be implemented nationally, regionally, 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 are often linked to early warning.

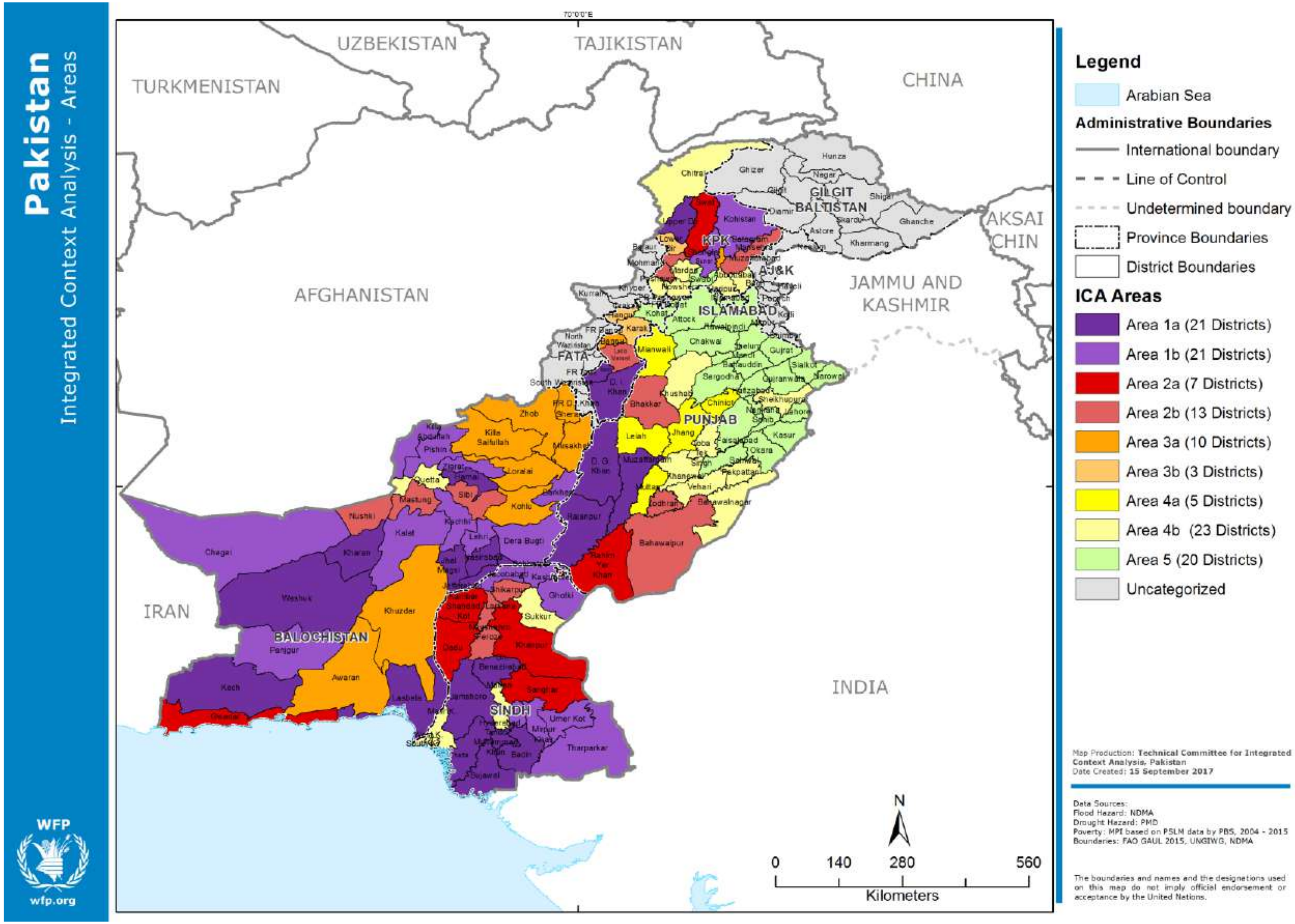
12. Programmatic Themes Derived From ICA Areas and Categories

ICA classifies districts into 5 Categories based on their levels of recurring vulnerability to food insecurity and exposure to natural climate-related hazards. ICA Categories and Areas, mapped on next page, provide evidence to inform discussions and selection of broad programmatic strategies using thematic building blocks of safety nets, DRR, early warning and disaster preparedness.

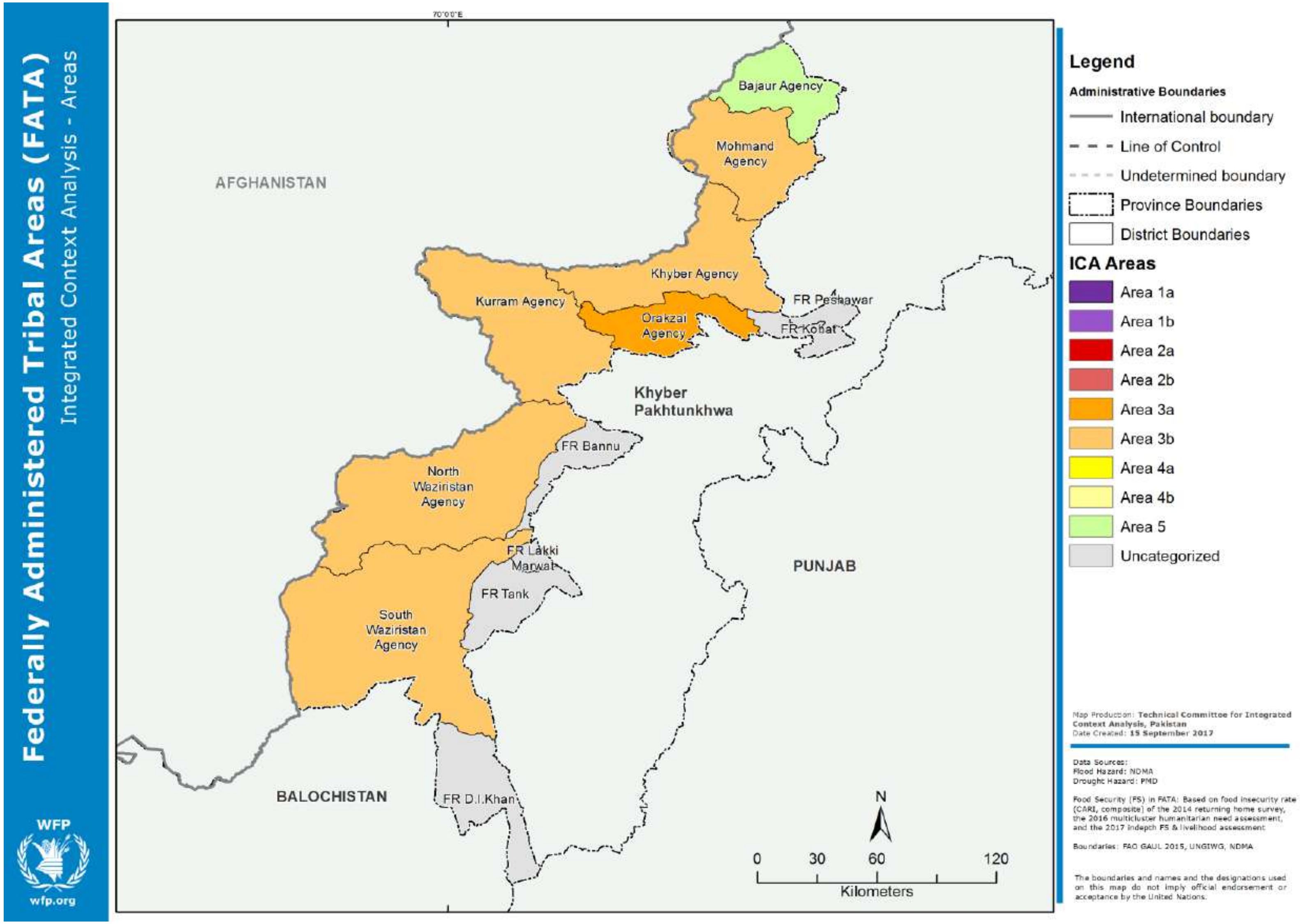
Combined level of natural hazards	Recurrence of vulnerability to food insecurity above threshold		
	Low	Medium	High
Low	Area 5	Area 3B	Area 3A
Medium	Area 4 B	Area 2 B	Area 1 B
High	Area 4 A	Area 2 A	Area 1 A

Category 1	Persistent vulnerability to 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.
Category 2	Intermittent vulnerability to food insecurity patterns may be related to either shocks (natural or man-made) 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.
Category 3	Districts identified as Area 3A show persistent vulnerability to food insecurity that can justify safety nets; Area 3B districts are more likely linked to seasonal factors where safety nets may also be applicable, 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.
Category 4	In the absence of a clear long-term vulnerability to food insecurity entry point (noting that pockets of food insecurity may exist), DRR including early warning / preparedness is a priority. Further, attention should be paid to land degradation given that this could worsen future shocks, potentially impacting food security.
Category 5	In the absence of a clear long-term vulnerability to food insecurity entry point (noting that pockets of food insecurity may exist) programme themes should concentrate on DRR to a level justified by the risk. This can include ensuring appropriate early warning/disaster preparedness relative to risk, as well as mitigating land degradation and other risk reduction measures.

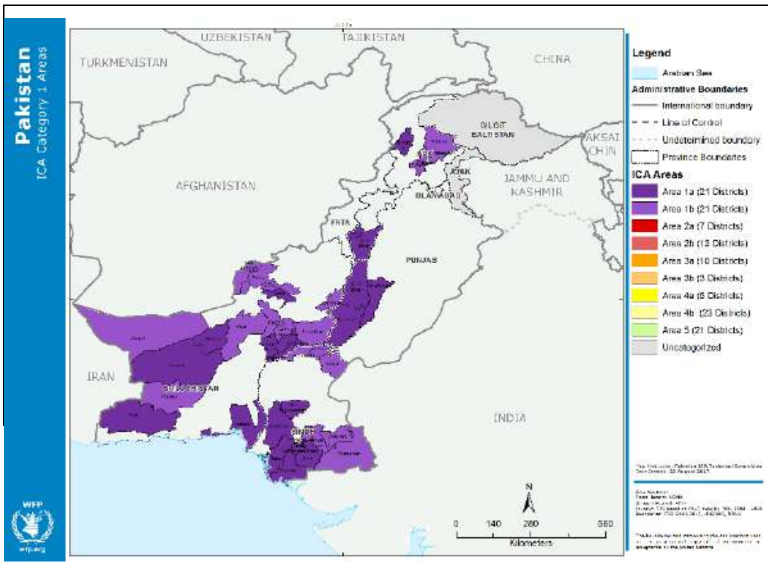
13. ICA Areas Map



14. ICA Areas Map (FATA)



15. Category 1: Year Round Food Security Safety Nets and Broad DRR



Category 1 areas show high recurrence of vulnerability to food insecurity above the threshold over the past reference period and face high or medium levels of natural hazards.

Persistent vulnerability to food insecurity suggests that safety nets providing predictable support to vulnerable populations may be appropriate, whilst high shock hazards justify broad (comprehensive) DRR including infrastructure improvement, early warning and disaster preparedness.

Combined level of natural hazards	Recurrence of vulnerability to food insecurity above threshold		
	Low	Medium	**High**
Low	Area 5	Area 3B	Area 3A
Medium	Area 4B	Area 2B	**Area 1B**
High	Area 4A	Area 2A	**Area 1A**

Districts in Category 1 are primarily concentrated in southwestern and central Balochistan, southeastern Sindh, southwestern Punjab and northern Khyber Pakhtunkwha (KP). These areas are characterised by recurrent vulnerability to food insecurity and high or medium natural hazards. These areas would benefit from combinations of food security focused safety nets and comprehensive disaster risk reduction (DRR) interventions.

Vulnerability to food insecurity is consistent, throughout the year as well as across years, in most districts. This suggests that year-round safety net[5] approaches will be most relevant in helping people to move toward greater resilience. Consistent, predictable support throughout the year will enable people to incorporate these resources into household planning and thus optimise their own investments into livelihood activities. Furthermore, safety net approaches will protect against negative coping strategies that can include selling off personal and livelihood assets. These actions although satisfy short-term necessities yet can set back development progress.

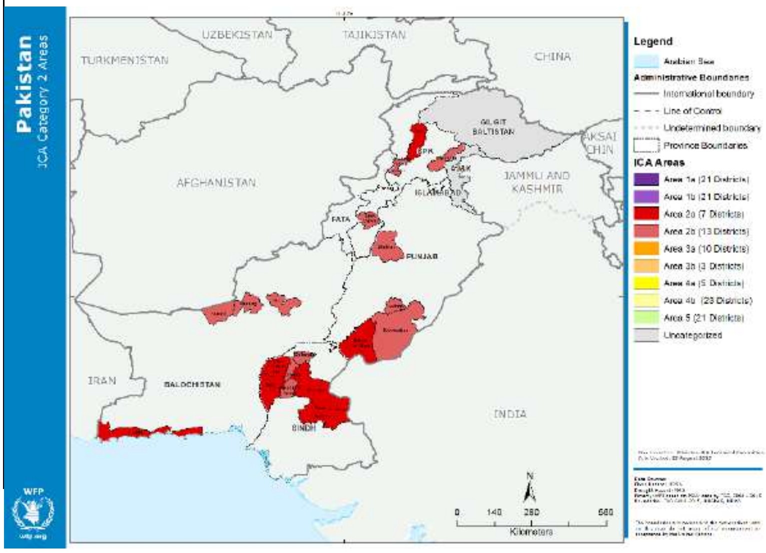
Disaster risk reduction efforts can include physical measures to reduce risk, as well as early warning and emergency preparedness. DRR should concentrate on reducing the risk posed by ***floods*** in Category 1 districts in southeastern Sindh, southwestern Punjab, all Category 1 districts in KP and several districts of Balochistan. There may be opportunities to build dry-season DRR efforts to reduce monsoon flood risk into longer-term food security programming and adding a productive component to safety nets, as discussed above.

Drought risk in Category 1 areas is highest across western and eastern Balochistan, southern Sindh, southern KP and Muzaffargarh district in Punjab. These districts would benefit most from related DRR, and again, there may be opportunities to embed DRR efforts into productive safety nets. Areas where high flood and drought hazards overlap warrant special focus.

Core lens analysis shows negative land cover change and districts significantly prone to soil erosion such as Battagram, Shangla and Upper Dir in KP. These factors can worsen flood risk therefore addressing them should be included in DRR. In other Category 1 areas such as Kohistan in KP and a number of districts across central Balochistan land cover change is less critical but erosion remains a significant concern. GLOF and landslides are a significant concern in Upper Dir and Kohistan of KP. Lastly, DRR should also address seismic risk in Category 1 districts in northwest and central Balochistan, as well as KP.

[5] Although some participants during National consultation perceived that in Jaffarabad and Jhalmagsi (Balochistan) and all Category 1 districts in Sindh aside from Badin, flexible safety nets targeting lean seasons would be more appropriate due to food gaps that follow agricultural cycle patterns.

16. Category 2: Flexible Food Security Safety Nets or Livelihood Recovery & DRR



Districts in Category 2 Areas show moderate recurrence of vulnerability to food insecurity above the threshold over the past reference period (as opposed to persistent recurrence as seen in Category 1 areas), coupled with high or medium natural hazards.

Intermittent vulnerability food insecurity patterns may be related to either shocks (natural or man-made) 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 hazards argue for broad DRR including infrastructure improvement, early warning and disaster preparedness.

Combined level of natural hazards	Recurrence of vulnerability to food insecurity above the threshold		
	Low	**Medium**	High
Low	Area 5	Area 3B	Area 3A
Medium	Area 4B	**Area 2B**	Area 1B
High	Area 4A	**Area 2A**	Area 1A

Category 2 districts, where vulnerability to food insecurity is above thresholds some years but not in others and where natural shock hazard is high or medium, are found throughout the country. These include Mastung and Nushki in far south Balochistan, central Sindh, Bhakkar in south east Punjab and both north and south KP.

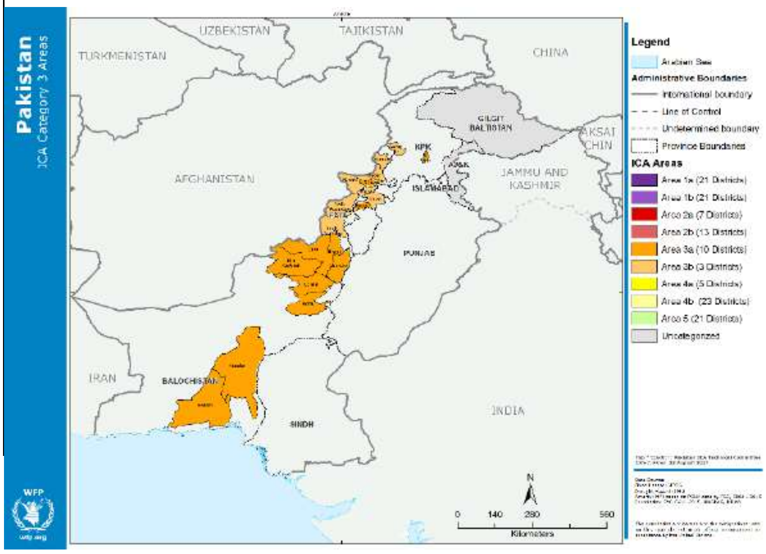
In these districts ***flexible food security safety nets***, productive or protective as appropriate, that can expand to include marginal population in bad years would be a significant support to longer-term development efforts. These would lift the most vulnerable population and provide a form of insurance to marginal households.

Alternatively, needs-based ***livelihood recovery*** efforts in unfavourable years could protect marginal households against negative coping strategies that undermine development gains. This highlights the need for regular and accurate data collection to enable livelihood protection or recovery efforts and respond to changing circumstances in a timely manner.

Disaster risk reduction could benefit Category 2 regions in south Balochistan with emphasis on drought and more moderate investments in flood. This drought and flood balance is reversed in Category 2 districts in Sindh except for Dadu where the frequency of both hazards is high. In southern Punjab, Rahim Yar Khan faces high recurrence of flood and drought, whilst the main concern in Bahawalpur and Lodhran is drought alone. In KP flooding is the main hazard but drought is also a concern to some extent. DRR programming could add a productive element to food security safety nets with a goal of building resilience that would allow households to graduate from safety net.

Considering **core lenses**, Swat in KP stands out for showing signs of significant negative land cover change and soil erosion propensity which can increase the risk posed by flooding. DRR can also address seismic risk in central Balochistan and northern KP.

17. Category 3: Year Round or Flexible Food Security Safety Nets, Livelihood Recovery



Districts in Category 3 show high or moderate level recurrence of vulnerability to food insecurity above the threshold over the past reference period, coupled with relatively low natural shock hazards.

Districts identified as Area 3A show persistent vulnerability to food insecurity that can justify year round safety nets. Area 3B districts may be linked to seasonal factors where flexible safety nets may be applicable, while for natural shocks livelihood recovery is priority. Whilst natural shock hazard is lower, local contexts may benefit from early warning and disaster preparedness.

Combined level of natural hazards	Recurrence of vulnerability to food insecurity above the threshold		
	Low	Medium	High
Low	Area 5	Area 3B	Area 3A
Medium	Area 4B	Area 2B	Area 1B
High	Area 4A	Area 2A	Area 1A

Category 3 districts are concentrated in southeast and north Balochistan, most parts of FATA and central parts of KP.

There is a significant distinction between districts in ICA Area 3A and 3B. In Area 3A (all districts in Balochistan and about half of the districts in KP under Category 3), ***vulnerability to food insecurity*** is consistently above threshold. This suggests year round protective food security safety net approach is most appropriate.

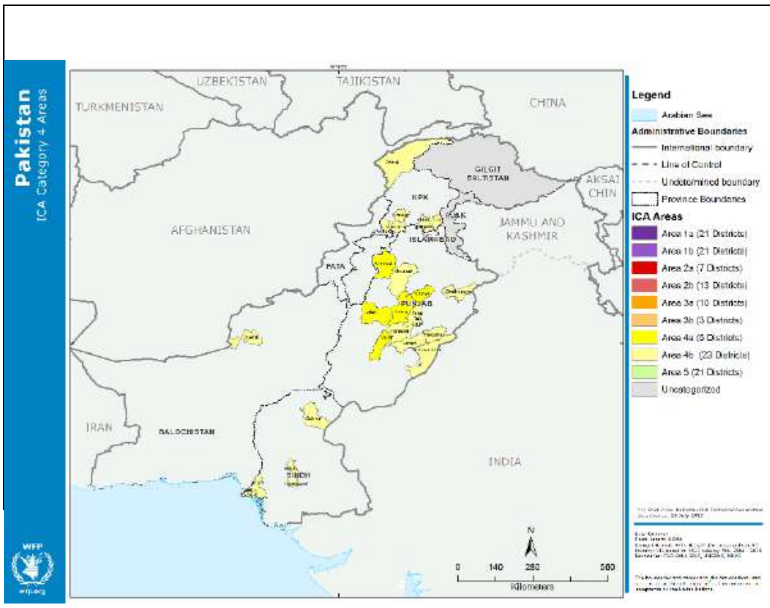
Meanwhile, patterns of vulnerability to food insecurity in ICA Area 3B (five agencies of FATA and half of KP districts under Category 3) are similar to those found in Category 2. Therefore, same approach is recommended: either flexible safety nets (productive or protective) that address the most vulnerable and can be scaled up to absorb marginal households or livelihood recovery programmes that respond to increased needs. Both these themes can minimise negative coping strategies and protect development gains.

Disaster risk reduction, given a relatively low level of exposure to natural hazards in Category 3 districts, can focus on ensuring effective early warning and disaster preparedness commensurating to the level of hazard in each district, rather than major investments in infrastructure improvements (although these may still be appropriate in specific high hazard places). This means developing appropriate systems wherein accurate and science-based forecasts could be configured into disaster preparedness frameworks for triggering timely actions before onset of events.

In southern Balochistan early warning and preparedness should address both flood and drought hazards; in the north floods are of more significant concern. In FATA agencies under Category 3 floods are more frequent than drought, whilst in KP the picture is mixed therefore appropriate interventions should address this complexity.

Core lens analysis shows that in Lower Dir and Tor Ghar districts of KP negative land cover change and soil erosion propensity could increase flood risk suggesting focus on structural interventions for mitigation in addition to early warning and disaster preparedness. Seismic risks mitigation should be planned for Category 3 districts of northern Balochistan as well as, Lower Dir and Tor Ghar in KP.

18. Category 4: Broad Disaster Risk Reduction



Category 4 districts exhibit low recurrence of vulnerability to food insecurity above the threshold over the past reference period and high or medium level of natural shock hazards.

Whilst evidence does not support widespread food security focused interventions, broad DRR (including infrastructure improvement as well as early warning and disaster preparedness) is a priority. Further, attention should be paid to land degradation and/or other core lenses given that these could worsen future shocks, potentially impacting food security.

Combined level of natural hazards	Recurrence of vulnerability to food insecurity above the threshold		
	Low	Medium	High
Low	Area 5	Area 3B	Area 3A
Medium	**Area 4B**	Area 2B	Area 1B
High	**Area 4A**	Area 2A	Area 1A

Category 4 districts are primarily concentrated in central Punjab, some in Sindh and KP while only Quetta in Balochistan.

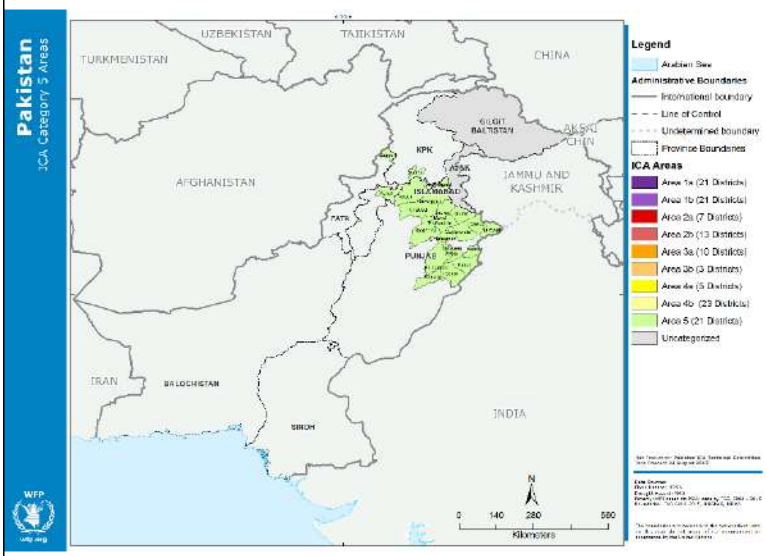
Whilst ***vulnerability to food insecurity*** is relatively low in these areas, specific interventions to improve food security situation for the most vulnerable residing in informal settlements of urban and peri-urban areas or remote areas would still be appropriate.

Effective **disaster risk reduction** can protect development gains and reduce the likelihood of loss from potential future hazardous events which can reverse existing gains and set back progress. For DRR in Punjab, the southernmost Category 4 districts face notably high recurrence of ***drought*** whilst recurrence of drought is lower in far northern districts. Drought is also a major concern in Quetta (Balochistan) and occurs with moderate frequency in Category 4 districts of Sindh and KP.

Flood recurrence is highest in central west Punjab where high recurrence of drought is also present. In Sindh, Sukkur stands out for flood frequency and negative land cover change which is a concern. Whilst in KP, Peshawar and Nowshara are highlighted for flood. These districts and Abbottabad also face negative land cover change and soil erosion propensity that could increase the risk posed by floods. In these areas DRR for each hazard should take a broad approach that combines long term physical infrastructure measures to reduce risk with early warning and disaster preparedness systems that can act as insurance for residual risks. In other districts under Category 4 hazard recurrence is of medium level and it may be more relevant to focus on early warning and disaster preparedness systems.

Core lens analysis shows that beyond flood and drought focused DRR, Quetta and Chitral could benefit from DRR to address seismic risk. Chitral also faces a significant likelihood of GLOF and landslide which should be addressed through physical risk mitigation measures as well as disaster preparedness and early warning for GLOF.

19. Category 5: Early Warning and Disaster Preparedness



Districts in Category 5 show low recurrence of vulnerability to food insecurity above the threshold over the past reference period and face low natural shock hazards.

In the absence of a clear vulnerability to food insecurity (noting that pockets of food insecurity may exist), as well as low natural shock hazards, programmatic themes should focus on early warning and disaster preparedness relative to risk, as well as mitigation of land degradation.

Combined level of natural hazards	Recurrence of vulnerability to food insecurity above the threshold		
	Low	Medium	High
Low	Area 5	Area 3B	Area 3A
Medium	Area 4B	Area 2B	Area 1B
High	Area 4A	Area 2A	Area 1A

Category 5 districts in the country are mainly located in northeastern Punjab, Kohat in KP and Bajaur in FATA.

Although these areas show generally low recurrence of vulnerability to food insecurity and climate related hazards, it would be beneficial to ensure effective ***early warning*** and ***disaster preparedness*** measures. This can include developing plans and capabilities as well as more technical elements like scientific forecasting and communication systems. Such measures should be put in place with the objective of protecting existing development gains from potential drought and flood events because although recurrence is relatively low events can still occur.

Medium level of flood recurrence in Category 5 districts in northeast Punjab and relatively high recurrence of drought in Bajaur of FATA, Kohat in KP and districts in southeastern Punjab could benefit the most from early warning and disaster preparedness.

Core lens analysis shows that the high level of negative land cover change in northern Punjab, where some districts are also prone to soil erosion propensity, deserves attention. These are both factors that can worsen the risk posed by floods and should be addressed as part of a DRR efforts to lower the chances of future disasters.

20. DRR in FATA Frontier Regions, Gilgit Baltistan, and Azad Jammu & Kashmir

MPI and food security data is not available to identify ICA Areas and Categories for FATA Frontier Regions (FR), Gilgit Baltistan and Azad Jammu & Kashmir (AJ&K). Following outlines how ***disaster risk reduction*** (DRR) is relevant to the context, based on hazard analysis of flood, drought and core lenses.

Flood recurrence is high across Gilgit Baltistan (except for Astore, which is medium) and northern AJ&K, suggesting comprehensive flood-focused DRR. Although flood recurrence is low in southern AJ&K and FATA FR, investing in early warning and disaster preparedness can help protect development gains.

Drought recurrence is medium in eastern Gilgit Baltistan and part of central AJ&K, arguing for comprehensive DRR. In areas where drought recurrence is lower but can still happen early warning and disaster preparedness is important.

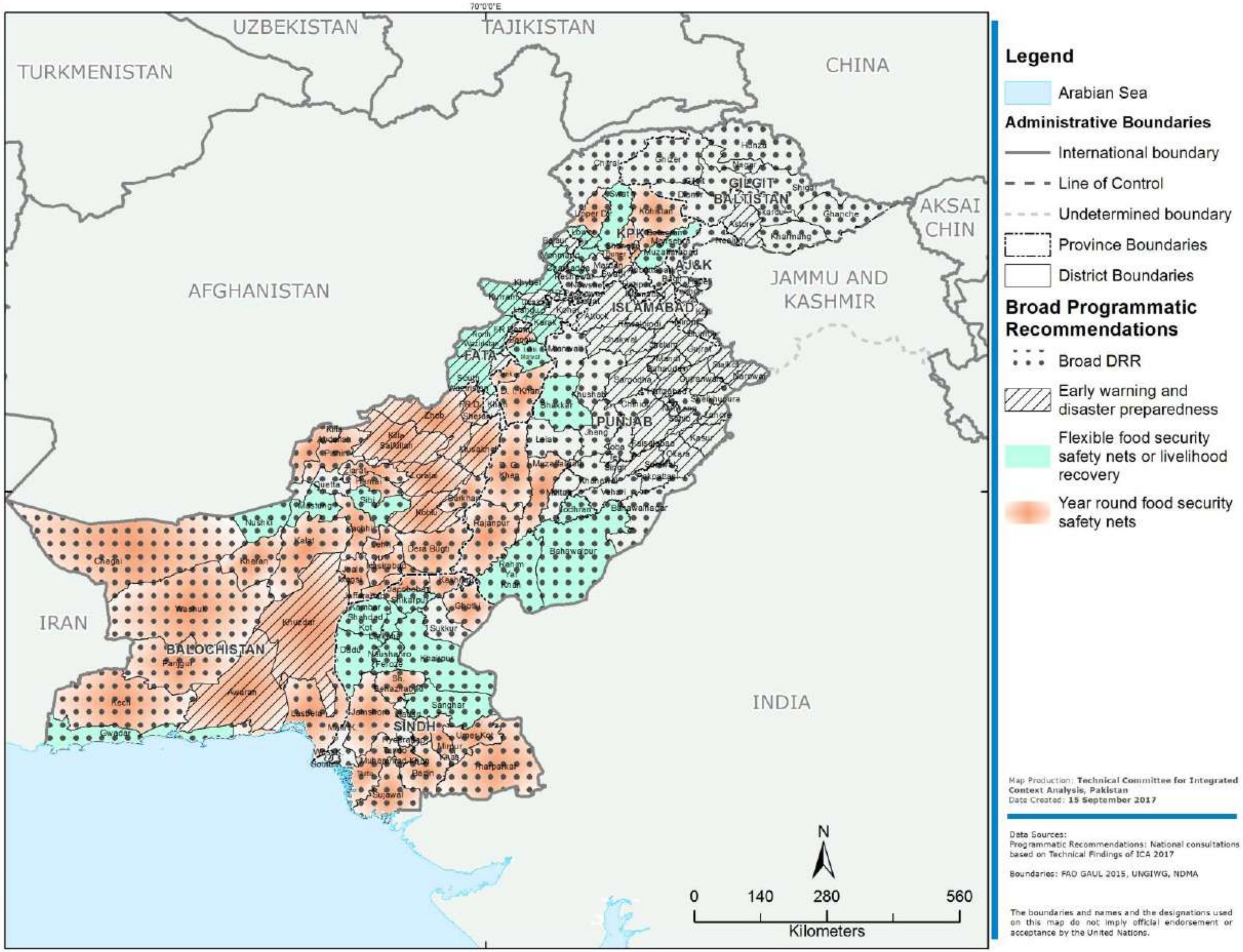
Core lens analysis shows that negative land cover change is a concern across Gilgit Baltistan except for some central districts, all districts of AJ&K and FATA FR. At the same time, AJ&K and FATA FR also significantly prone to soil erosion propensity. These factors can increase the risk posed by floods and should be addressed by DRR. This is true in areas where flood recurrence has historically been high (for example in Gilgit Baltistan) but also in areas where floods have historically been less frequent (such as the FATA FR), as these factors could lead to more frequent flooding relative to past patterns. For landslide, eastern Gilgit Baltistan shows high hazard, while very high in parts of northwest and southwest Gilgit Baltistan as well as northern AJ&K. Eastern Gilgit Baltistan also faces high GLOF hazard. In cases, where hazard translates to risks to populations, physical mitigation measures are appropriate in addition to early warning (where possible) and disaster preparedness.

Broad Programmatic Recommendations are summarized in a map next page.

Pakistan

Integrated Context Analysis

Broad Programmatic Recommendations



WFP

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Annex I Technical Analysis Methodology

Food Insecurity/Vulnerability to Food Insecurity

The ICA food security analysis aims to assess how the chosen indicator values have fluctuated, versus a benchmark, over the time period for which data is available. It assesses the trend of each geographic area by considering the ***number of times*** an area has exceeded a threshold, and reclassifies this recurrence using a simple 3-point scale.

As previously mentioned, MPI is used as a proxy for vulnerability to food insecurity and the threshold for the MPI is set at 0.329 the average of all available rounds. For FATA, the composite food insecurity rate is analysed using the threshold value of 38% as an average of all available rounds.

The number of recurrences chosen for the reclassification into a 3-point scale (low, medium, high) is based on the separation of relative number of recurrences (expressed as a percentage of recurrences out of the total number of available rounds) into 3 equal ranges:

Vulnerability to food insecurity above threshold			
% of recurrences above the threshold	**0 – 33.33%**	**33.34 – 66.67%**	**66.68 – 100%**
Vulnerability to food insecurity reclassification	Low (1)	Medium (2)	High (3)

This ensures that districts which were not covered in certain rounds/years (see table below) are not under-classified due to the lower number of overall rounds. For example, a district covered in only 4 rounds of MPI, but which always had an MPI value above the threshold would be classified as medium based on the absolute number of recurrences (4), instead of high as per the relative number of recurrences (4/4 = 100%).

Districts with less than 6 rounds of MPI data	Total number of MPI rounds	Years missing MPI data
Dera Bugti	5	2004/05
Kohlu		
Jamshoro	4	2004/05, 2006/07
Kambar Shahdadkot		
Kashmore		
Matiari		
Nankana Sahib		
Nushki		
Tando Allahyar		
Tando Muhammad Khan		
Washuk		
Kech/Turbat	5	2014/15
Panjgur	4	2012/13, 2014/15
Sherani	3	2004/05, 2006/06, 2008/09
Umerkot		

Rapid-onset shocks (Flood, Landslide, Earthquake, GLOF)

When available, local data on the historical number of events per year by district (preferably for the previous 30 years, though a minimum of 20 is acceptable) is used to derive the total number of events over the period for which data is available. The frequency of events during this extended timeframe allows ICA to capture trends of recurrence while minimizing bias towards recent events.

In Pakistan, the occurrence of floods, landslides & earthquakes have been recorded over the past 50 years or more. These tabular data have been collected by NDMA from various sources and used to compile, along with other relevant hazard indicators, a 5-point hazard ranking. In the case of GLOF, for which historical data is limited, the presence of glaciers and glacial lakes is used as a proxy for hazard.

Slow-onset shock (drought)

When national recorded data on historical drought occurrences is not available, various remotely sensed datasets can be used to analyse historical deficits in rainfall. The Pakistan Meteorological Department (PMD) has undertaken such an analysis to classify the drought vulnerability of each district, using high-resolution observational precipitation data from the Global Precipitation Climatological Centre and remotely sensed soil moisture data from the Climate Prediction Centre for 1951 to 2010.

The drought hazard is then prepared by calculating the following factors:

- Dependency on seasonal/monsoon rainfall
- Soil moisture
- SPI to calculate the drought years, frequency, intensity, return period of drought, and percentage area affected by drought.

The simplest equation to calculate the drought hazard index (DHI) is as follows:

$$DHI = \frac{\left(\frac{T_d}{T_y} + M_{index} + \frac{SM_{J-D}}{SM_{annual}}\right)}{3}$$

where T_d is total number of droughts; T_y is total number of years; M_{Index} is seasonal(winter/monsoon) rainfall index; SM_{J-D} is soil moisture (July–December); and SM_{annual} is annual soil moisture (Adnan et.al., 2015).

Land degradation

Land cover change

Land degradation analysis aims to identify and qualitatively classify negative change in land cover classes and deforestation, particularly in areas associated with high recurrence of natural hazards (flood and drought) and food insecurity. The analysis compares the status of land cover classes as measured in 1992 with the present (2015), considering changes on a yearly basis and with a spatial resolution of 300m. Data is sourced from ESA CCI which offers global coverage.

Each of the ESA standard land cover classes emerging for 1992 and 2015 is given a numerical "ecological value" (the values are ordinal: higher the number, the higher the ecological value).

ESA CCI Class	Generalized Class (based on IPCC)	Ecological value
Tree cover, broadleaved, evergreen, closed to open (>15%)	Forest	6
Tree cover, broadleaved, deciduous, closed to open (>15%)	Forest	6
Tree cover, needleleaved, evergreen, closed to open (>15%)	Forest	6
Tree cover, needleleaved, deciduous, closed to open (>15%)	Forest	6
tree cover, mixed leaf type (broadleaved and needleleaved)	Forest	6
Mosaic tree and shrub (>50%)/herbaceous cover (<50%)	Forest	6
Tree cover, flooded, fresh or brakish water	Forest	6
Tree cover, flooded saline water	Forest	6

Shurb or herbaceous cover, flooded, fresh-saline or brakish water	Wetland	6
Shrubland	Shrubland	5
Sparse vegetation (tree, shrub, herbaceous cover)	Shrubland	5
Sparse vegetation (tree, shrub, herbaceous cover)	Shrubland	5
Mosaic herbaceous cover (>50%)/ tree and shrub (<50%)	Grassland	4
Grassland	Grassland	4
Lichens and mosses	Grassland	4
Rainfeld cropland	Cropland	3
Irrigated cropland	Cropland	3
Mosaic cropland (>50%) / natural vegetation (tree, shrub, herbaceous cover) (<50%)	Cropland	3
Mosaic natural vegetation (tree, shrub, herbaceous cover) (>50%)/cropland (<50%)	Cropland	3
Bare areas	Barren or sparsely vegetated	2
Urban	Urban areas	1
Water	Water	0
Snow and Ice	Snow and ice	0

Changes over time are expressed as the difference between the initial (1992) and final (2015) land cover class values which can result in a range of values from +6 to -6 where **negative** values indicate a deterioration in the ecological value of the land, **zero** indicates no change in land cover and **positive** values indicate improvement in the ecological value.

The average change is calculated for each district, taking into consideration the extent and intensity of both positive and negative change. The range of **positive** values is broken down into three classes using Natural Breaks and the same is done for the **negative** values.

Erosion propensity

The main indicator utilised for the analysis of soil erosion emerges from a simplified version of the Revised Universal Soil Loss Equation (RUSLE) which is widely recognized as a reliable means of estimating erosion propensity. In its original form it is expressed as:

Erosion = R * K * Sl * C * P

Where "R" represents the rainfall factor, "K" represents the soil lithological factor, "S" represents the slope length factor, "C" represents the land use factor 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 at national or global scale, so the current analysis considers the other four key elements[6]:

- Rainfall incidence, WorldClim, 1960 - 1990 (~1 km resolution)

[6] For more information on the actual elaboration of the raster files and final erosion propensity calculation, please contact OSEP-GIS Unit WFP HQ Rome.

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

Dominant Land Cover

FAO Pakistan analysed the ESA GlobeCover 2009 map in order to extract dominant Land Cover class for each district. In 2008, the ESA GlobCover 2005 project delivered to the international community the first 300-m global land cover map for 2005 as well as bimonthly and annual MERIS (Medium Resolution Imaging Spectrometer Instrument) Fine Resolution (FR) surface reflectance mosaics. The ESA-GlobCover 2005 project, carried out by an international consortium, started in April 2005 and relied on very rich feedback and comments from a large partnership including end-users belonging to international institutions (JRC, FAO, EEA, UNEP, GOFC-GOLD and IGBP) in addition to ESA internal assessment. The annual land cover map is derived by automatic and regionally-tuned classification of a time series of global MERIS FR mosaics for the year 2009[7].

Dominant Land Cover

In order to find out the dominant land cover class for each district, analysis is performed using Spatial Analyst toolbox of ArcGIS. For this purpose, conversion of land cover raster to polygon is carried out using feature to polygon tools. Spatial Join is performed between the converted land cover polygons and the district layer. Each of the land cover polygon is spatially joined to the respective district in which it falls into based on its geographical location. In this way, each district is linked to/contained multiple land cover classes that fall in that district. Area calculations are performed to find out the area under each land cover class in a district. Based on the area covered by a particular land cover class in a district, land cover classes are ranked in order to find out first and second most dominant LC classes i.e. the classes having largest area covered in a district.

Generalization & Reclassification

ESA GlobeCover comprises 22 land cover classes defined with the United Nations (UN) Land Cover Classification System (LCCS). As a result, 7 unique groups are achieved for the first most dominant LC class; while 13 unique groups are achieved for the second most dominant class for 156 districts. However, mapping only first dominant land cover class or second dominant land cover class separately is not meaningful, therefore the two most dominant land cover classes are mapped together and reclassified into 13 unique combinations in order to make them more meaningful, easy to comprehend and visually less complex.

[7] Sophie Bontemps (2011). GLOBCOVER 2009 - Products Description and Validation Report

Annex II - Data Sources

Administrative boundaries
Unit/level of analysis: District/Agency (Admin 2)
File format & Source: Shapefile, NDMA

Population Figures
Main source
Indicator: Estimated population
Source: Pakistan Bureau of Statistics
Time span: 2004 - 2016
Comment: Figures are estimates based on 1998 census and growth rates

Food security
Main source
Indicator: Multi-dimensional Poverty Index
Source: UNDP
Time span: 2004/05 – 2014/15, every alternate year
Comment: The indicator is a proxy for vulnerability to food insecurity, it covers the 4 provinces but not FATA, AJK or GB

Additional sources
Indicator: Composite Food Insecurity Rate (CARI)
Source: WFP (2014, 2017) & WFP/OCHA (2016)
Time span: 2014 - 2017
Comment: The dataset was used for FATA only, and represents the situation of returnee households, not the general population.

Natural Shocks - Core
Floods
Indicator: Flood Hazard Index
Source: NDMA
Time span: 1950 - 2015
Comment: Encompasses both riverine and flash floods.

Drought
Indicator: Drought Hazard Index
Source: Pakistan Meteorological Department
Time span: 1951 - 2010
Comment: Based on observational gridded precipitation & remotely-sensed soil moisture data

Natural Shocks - Lenses
Landslides
Indicator: Landslide Hazard Index
Source: NDMA
Time span: 1950 - 2015
Comment: N/A

Glacier Lake Overflow Flood
Indicator: GLOF Hazard Index
Source: NDMA
Time span: 1950 - 2015
Comment: Not based on historical record of events, only the presence of Glacial Lakes.

Earthquake
Indicator: Earthquake Hazard Index
Source: NDMA
Time span: 1905 - 2015
Comment: Both instrumentation and measurement scale of earthquake events have evolved over the time period considered.

Land degradation
Indicator: Land Cover Change
Source: ESA CCI
Time span: 1992 - 2015
Comment: The analysis is a proxy for degradation of vegetation and associated ecosystem services.

Indicator: Erosion Propensity
Source: WFP OSEP analysis based on RUSLE
Time span: 2012 (Land Cover)
Comment: The analysis does not capture the presence of existing infrastructure designed to manage/reduce erosion.

Land Cover
Indicator: 2 Most Dominant Land Cover Classes
Source: ESA Globcover data
Time span: 2009
Comment: Land cover is a proxy, but can only identify areas where livelihoods rely heavily on agriculture (and potentially pastoralism)

Population Density
Source: LandScan
Time span: 2015
Comment: Population distribution is estimated based on associated factors, e.g. land cover, road networks, slope, etc.

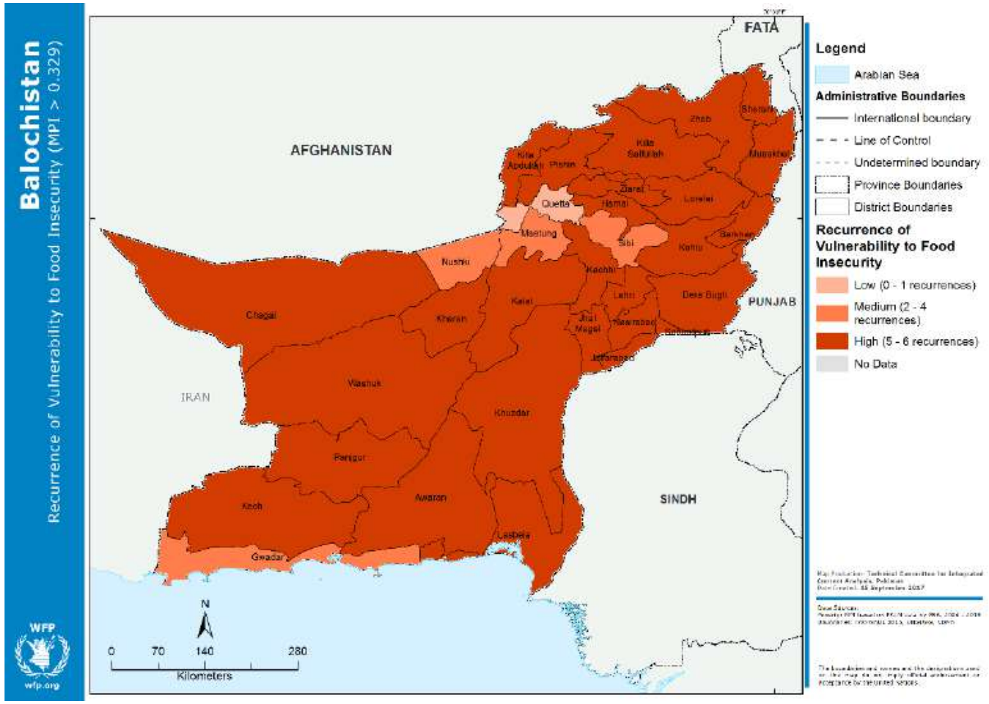
Annex III - Provincial Data Tables and Outcome Maps

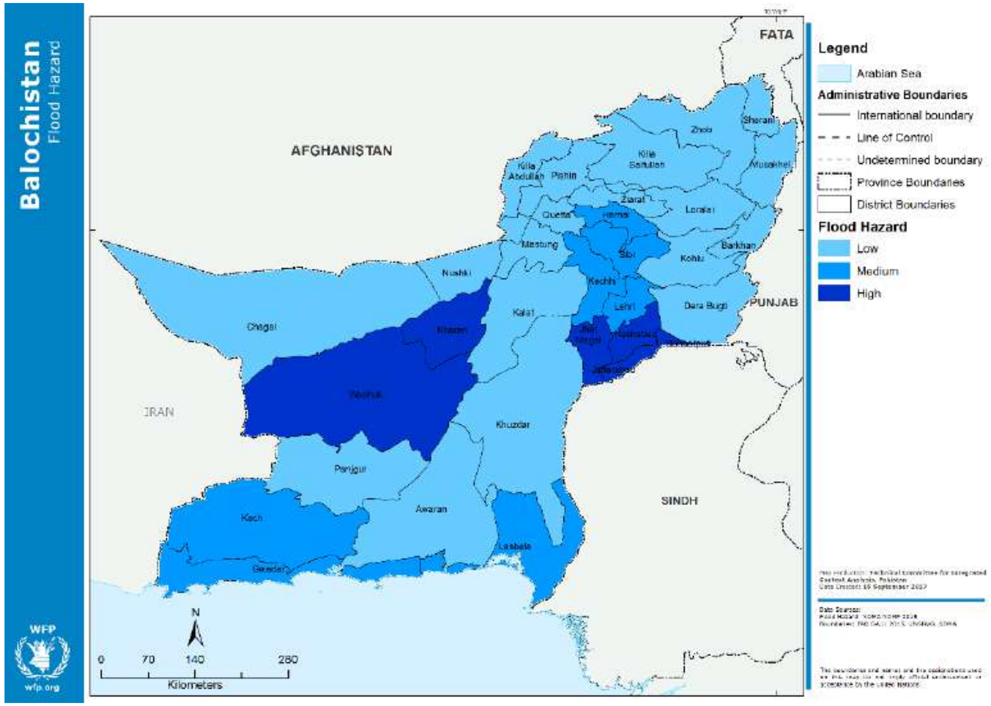
ICA Collecting Table - Balochistan

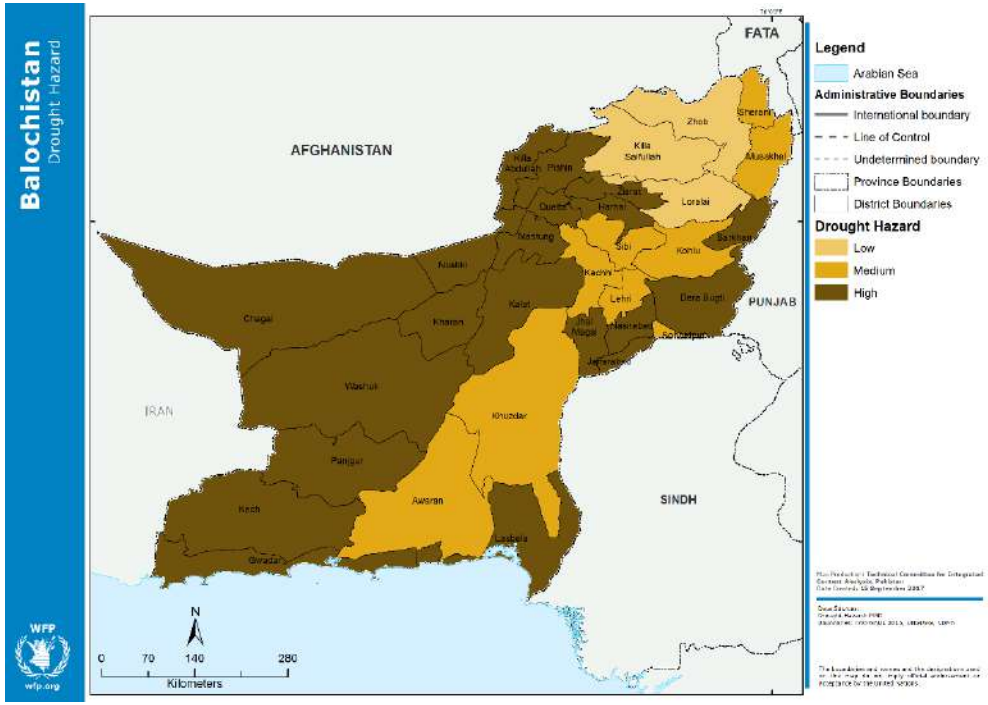
District	Vulnerability to Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Vulnerability to Food Insecurity with Final Natural Hazard Classification		Estimated vulnerable population to food insecurity based on Multi-dimensional Poverty Index (MPI) = Incidence x Intensity, derived from 6 datasets of Pakistan Social and Living Measurement surveys (2004/05, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15)				Total projected population for 2015/16 *(from Provincial Bureaux of Statistics)*	Core Lenses				
	Classification of Recurrence of High Vulnerability to Food Insecurity (MPI > 0.329): *Low = 0-2 recurrences, Medium = 3-4 recurrences, High = 5-6 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification *(Flood & Drought)*	ICA Categories	ICA Areas	Long-term average population vulnerable to food insecurity *(Average of all PSLM rounds)*	Estimated chronically vulnerable population to food insecurity *(Average of 2 lowest PSLM rounds)*	Estimated highest number of vulnerable population to food insecurity *(Average of 2 highest PSLM rounds)*	Estimated potential additional vulnerable population to food insecurity in case of some MPI dimensions significantly deteriorate *(Average of 2 highest PSLM rounds Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Very Low/Low; 2= Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Barkhan	High	Low	High	Medium	Category 1	Area 1b	82344	71794	97385	15041	175000	1	1	3	2	7
Chagai	High	Low	High	Medium	Category 1	Area 1b	141399	77918	246789	105390	654000	2	1	1	1	5
Dera Bugti	High	Low	High	Medium	Category 1	Area 1b	160808	150072	170670	9862	308000	1	1	3	2	7
Harnai	High	Medium	High	High	Category 1	Area 1a	67913	57249	73596	5683	146000	1	1	3	3	8
Jaffarabad	High	High	High	High	Category 1	Area 1a	263911	238295	282567	18657	709000	1	1	2	1	5
Jhal Magsi	High	High	High	High	Category 1	Area 1a	80160	68706	89741	9581	179000	1	1	2	1	5
Kachhi	High	Medium	Medium	Medium	Category 1	Area 1b	164408	142839	183242	18834	359000	2	1	2	1	6
Kalat	High	Low	High	Medium	Category 1	Area 1b	106733	81376	141840	35106	277000	2	1	3	2	8
Kech	High	Medium	High	High	Category 1	Area 1a	201590	175056	221060	19470	463000	2	1	2	1	6
Kharan	High	High	High	High	Category 1	Area 1a	95195	78025	123717	28521	190000	2	1	3	1	7
Killa Abdullah	High	Low	High	Medium	Category 1	Area 1b	336503	261673	429407	92904	770000	1	1	3	2	7
Lasbela	High	Medium	High	High	Category 1	Area 1a	164454	145427	185281	20827	412000	2	1	2	2	7
Lehri	High	Medium	Medium	Medium	Category 1	Area 1b						2	1	3	1	7
Nasirabad	High	High	High	High	Category 1	Area 1a	191892	168726	212690	20798	467000	1	1	3	1	6
Panjgur	High	Low	High	Medium	Category 1	Area 1b	153925	139299	168551	14626	344000	2	1	2	1	6
Pishin	High	Low	High	Medium	Category 1	Area 1b	226057	196064	262504	36447	666000	1	1	4	1	7
Sohbatpur	High	High	Medium	High	Category 1	Area 1a						1	1	3	1	6

District	Vulnerability to Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Vulnerability to Food Insecurity with Final Natural Hazard Classification		Estimated vulnerable population to food insecurity based on Multi-dimensional Poverty Index (MPI) = Incidence x Intensity, derived from 6 datasets of Pakistan Social and Living Measurement surveys (2004/05, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15)				Total projected population for 2015/16 *(from Provincial Bureaux of Statistics)*	Core Lenses				
	Classification of Recurrence of High Vulnerability to Food Insecurity (MPI > 0.329): *Low = 0-2 recurrences, Medium = 3-4 recurrences, High = 5-6 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification *(Flood & Drought)*	ICA Categories	ICA Areas	Long-term average population vulnerable to food insecurity *(Average of all PSLM rounds)*	Estimated chronically vulnerable population to food insecurity *(Average of 2 lowest PSLM rounds)*	Estimated highest number of vulnerable population to food insecurity *(Average of 2 highest PSLM rounds)*	Estimated potential additional vulnerable population to food insecurity in case of some MPI dimensions significantly deteriorate *(Average of 2 highest PSLM rounds Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Very Low/Low; 2= Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Washuk	High	High	High	High	Category 1	Area 1a	62548	55987	69109	6561	150000	2	1	3	1	7
Ziarat	High	Low	High	Medium	Category 1	Area 1b	15405	12283	19297	3891	36000	1	1	4	2	8
Gwadar	Medium	Medium	High	High	Category 2	Area 2a	84340	72445	95285	10945	284000	2	1	3	1	7
Mastung	Medium	Low	High	Medium	Category 2	Area 2b	66019	47054	92717	26698	210000	1	1	3	1	6
Nushki	Medium	Low	High	Medium	Category 2	Area 2b	57085	50097	64072	6988	169000	2	1	4	1	8
Sibi	Medium	Medium	Medium	Medium	Category 2	Area 2b	60387	31794	93504	33117	166000	1	1	3	2	7
Awaran	High	Low	Medium	Low	Category 3	Area 3a	58154	42937	69150	10996	128000	2	1	2	3	8
Khuzdar	High	Low	Medium	Low	Category 3	Area 3a	224313	184104	264829	40516	637000	1	1	2	2	6
Killa Saifullah	High	Low	Low	Low	Category 3	Area 3a	121821	105853	135598	13777	259000	2	1	3	1	7
Kohlu	High	Low	Medium	Low	Category 3	Area 3a	76596	71639	81897	5300	143000	2	1	3	3	9
Loralai	High	Low	Low	Low	Category 3	Area 3a	167427	139331	189888	22461	384000	2	1	3	1	7
Musakhel	High	Low	Medium	Low	Category 3	Area 3a	93380	74567	106393	13014	198000	1	1	3	3	8
Sherani	High	Low	Medium	Low	Category 3	Area 3a	43122	40518	46267	3146	87000	1	1	3	3	8
Zhob	High	Low	Low	Low	Category 3	Area 3a	136516	114224	167596	31079	268000	1	1	3	1	6
Quetta	Low	Low	High	Medium	Category 4	Area 4b	227325	181308	274145	46820	1502000	1	1	4	1	7

ICA Outcome Maps – Balochistan



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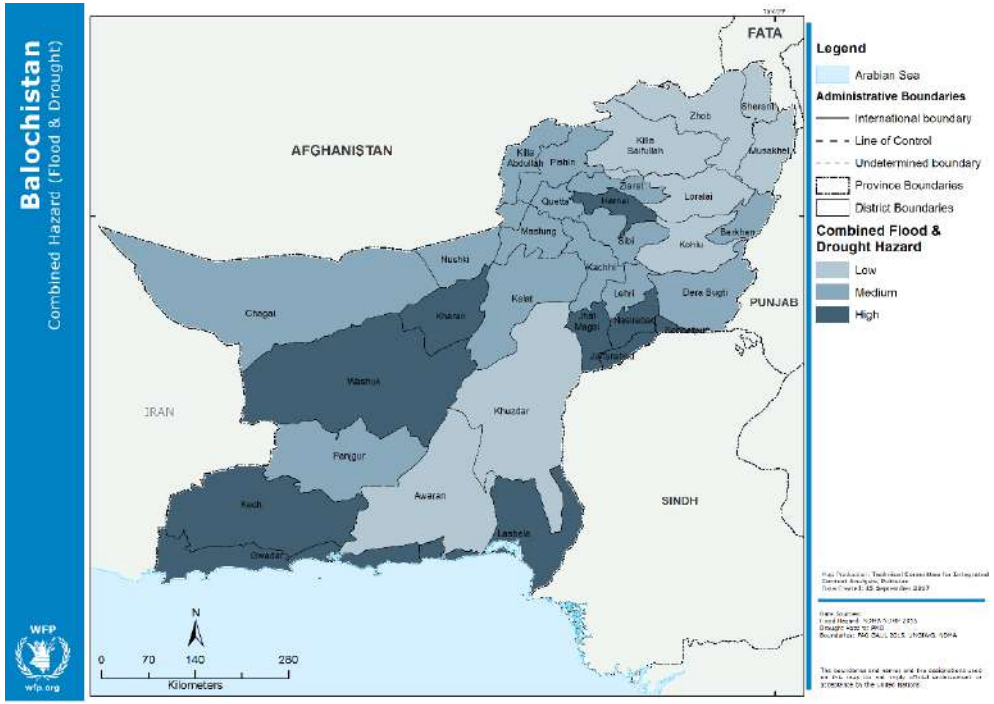
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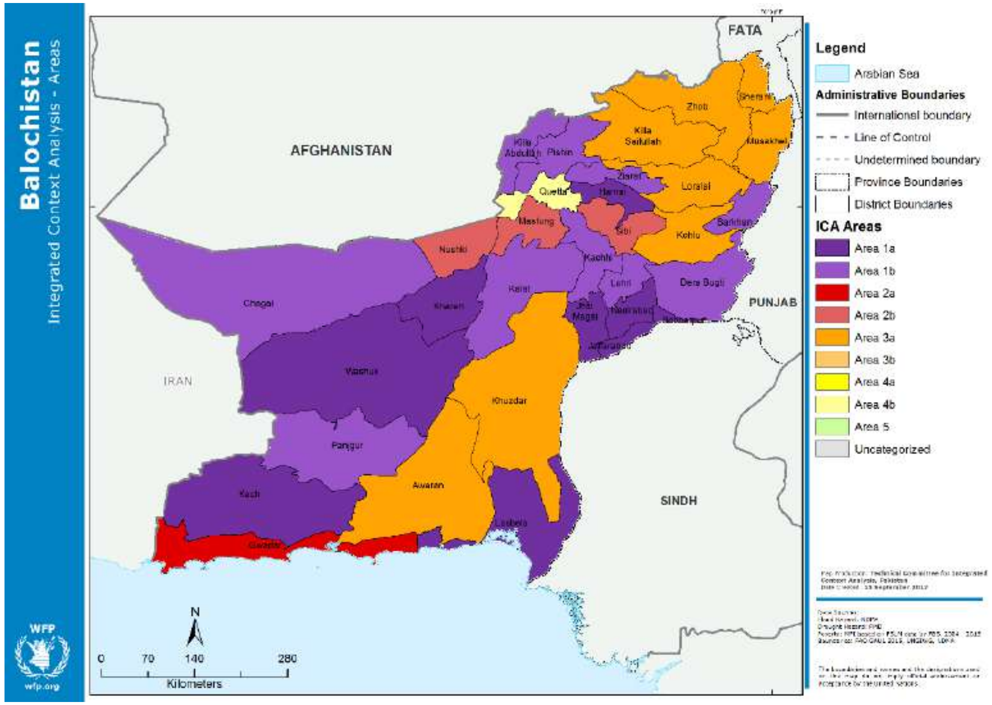
Balochistan
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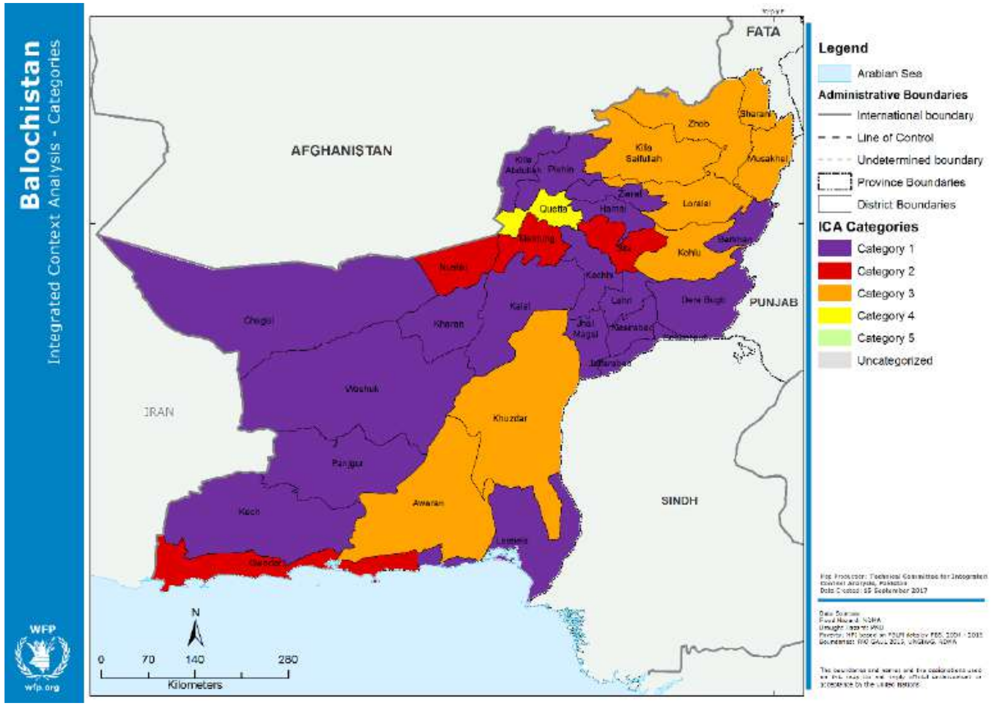
District Boundaries
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
N
0 70 140 280
Kilometers
WFP
wfp.org


Balochistan
Integrated Context Analysis - Categories
FATA
AFGHANISTAN
IRAN
PUNJAB
SINDH
Zhob
Killa Saifullah
Loralai
Kohlu
Dera Bugti
Quetta
Nushki
Chagai
Kharan
Kalat
Washuk
Panjgur
Kech
Gwadar
Awaran
Khuzdar
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Categories
Category 1
Category 2
Category 3
Category 4
Category 5
Uncategorized
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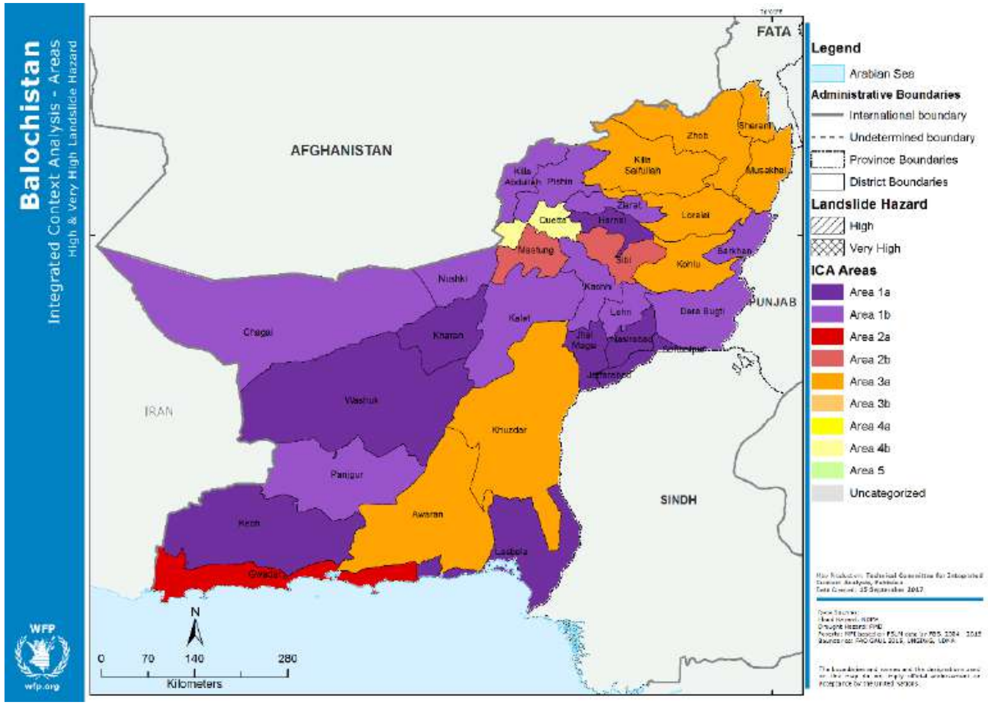
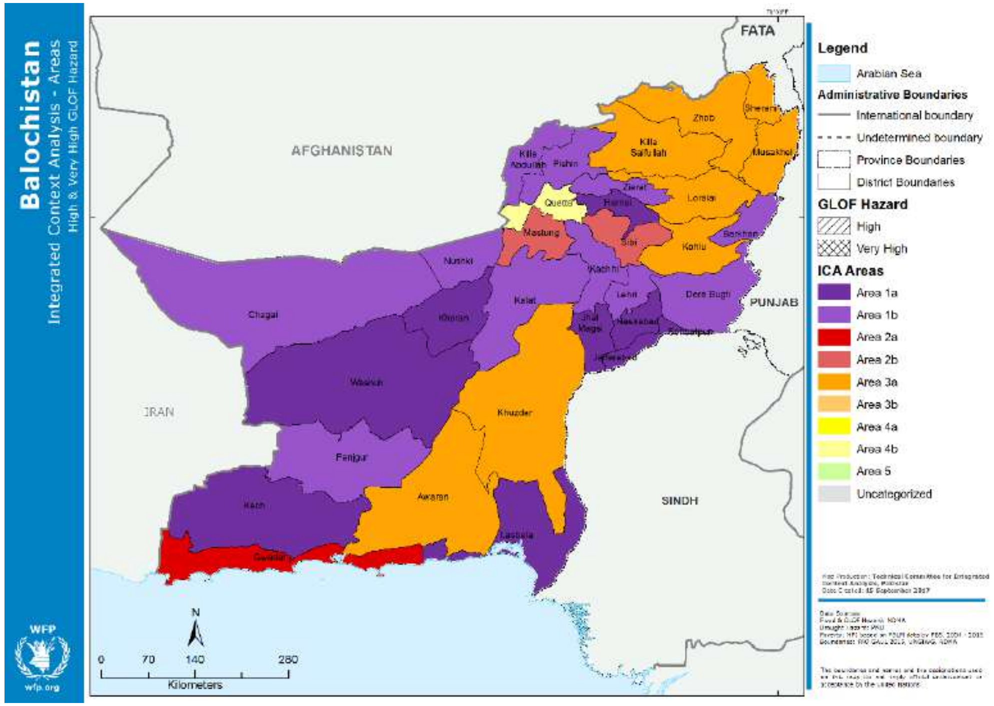
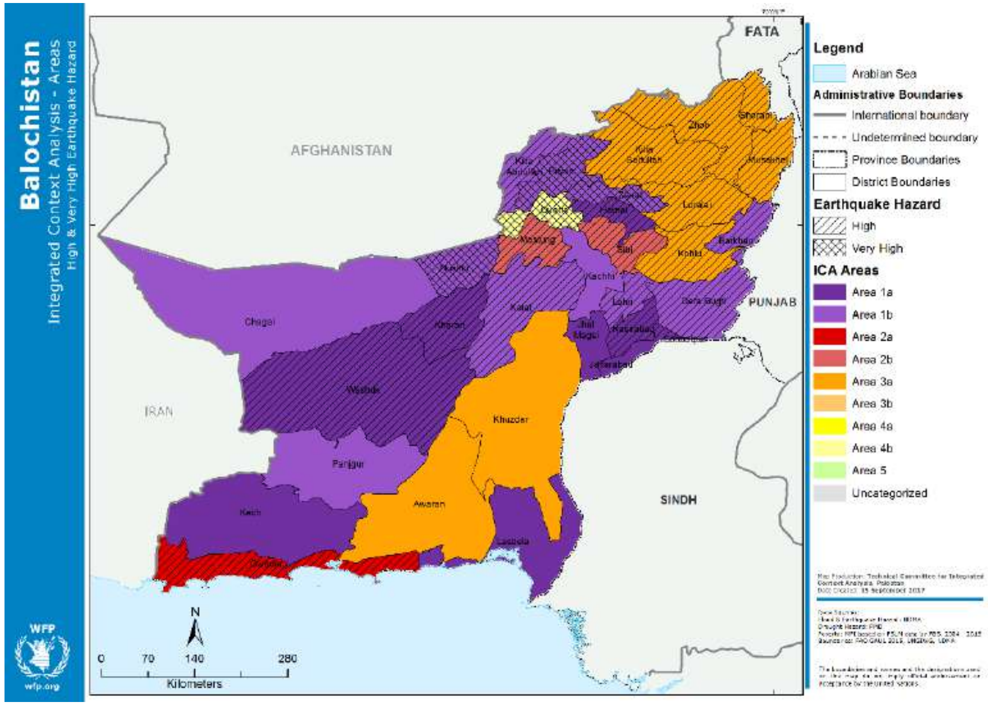
Kilometers
WFP
wfp.org

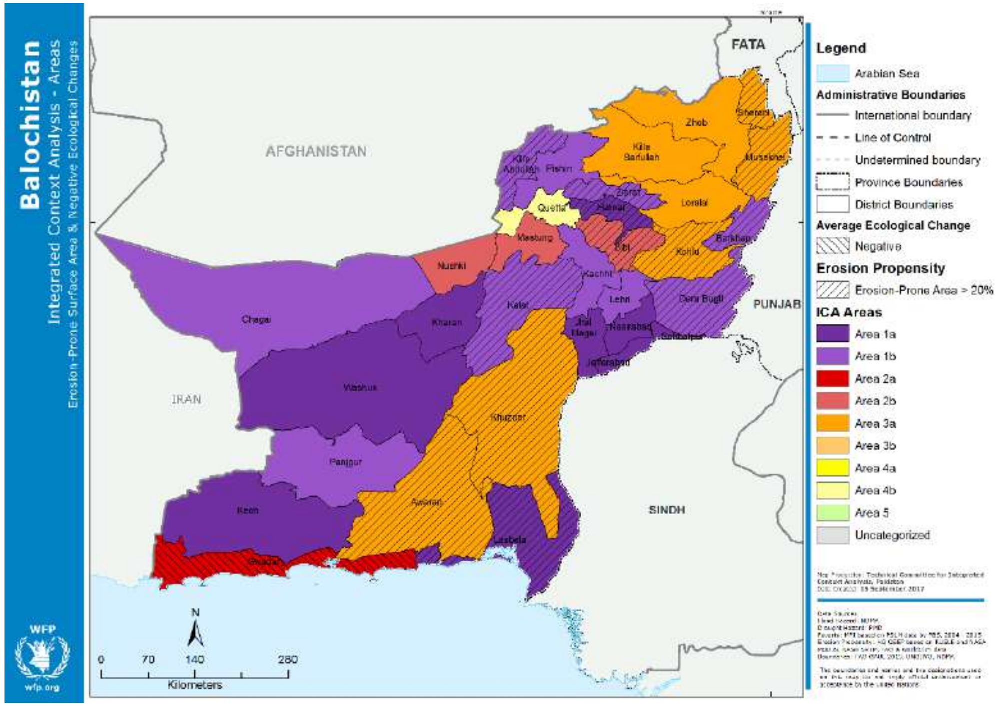


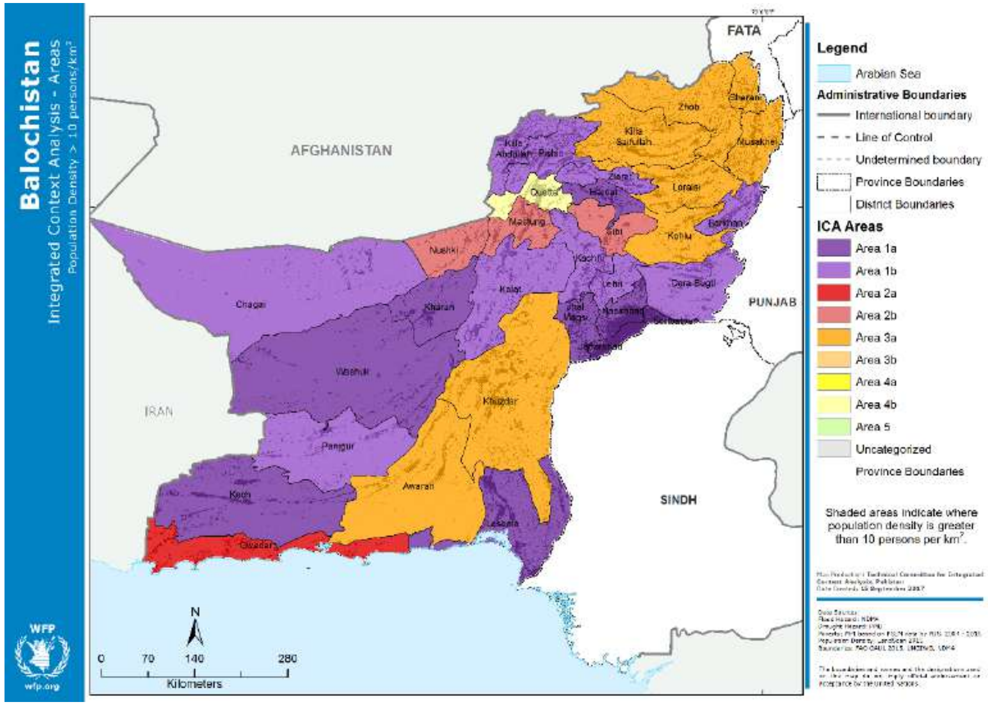
Balochistan
Integrated Context Analysis - Areas
High & Very High Landslide Hazard
FATA
AFGHANISTAN
IRAN
SINDH
PUNJAB
Legend
Arabian Sea
Administrative Boundaries
International boundary
Undetermined boundary
Province Boundaries
District Boundaries
Landslide Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
Kilometers
0 70 140 280
WFP
wfp.org



Balochistan
Integrated Context Analysis - Areas
High & Very High GLOF Hazard
FATA
AFGHANISTAN
IRAN
SINDH
PUNJAB
Legend
Arabian Sea
Administrative Boundaries
International boundary
Undetermined boundary
Province Boundaries
District Boundaries
GLOF Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
Kilometers
0 70 140 280
WFP
wfp.org


Balochistan
Integrated Context Analysis - Areas
High & Very High Earthquake Hazard
AFGHANISTAN
IRAN
FATA
PUNJAB
SINDH
Chagai
Washuk
Kharan
Nushki
Panjgur
Kech
Gwadar
Awaran
Khuzdar
Lasbela
Kalat
Mastung
Quetta
Kachhi
Jhal Magsi
Nasirabad
Jaffarabad
Lehri
Sibi
Harnai
Kohlu
Dera Bugti
Barkhan
Loralai
Zhob
Sherani
Musakhel
Killa Saifullah
Killa Abdullah
Pishin
N
0 70 140 280
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Undetermined boundary
Province Boundaries
District Boundaries
Earthquake Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
WFP
wfp.org


Balochistan
Integrated Context Analysis - Areas
Erosion-Prone Surface Area & Negative Ecological Changes
AFGHANISTAN
IRAN
FATA
PUNJAB
SINDH
Chagai
Washuk
Kharan
Nushki
Panjgur
Kech
Gwadar
Awaran
Khuzdar
Lasbela
Kalat
Mastung
Quetta
Kachhi
Jhal Magsi
Nasirabad
Jaffarabad
Sohbatpur
Lehri
Sibi
Harnai
Ziarat
Kohlu
Dera Bugti
Barkhan
Loralai
Zhob
Sherani
Musakhel
Killa Saifullah
Killa Abdullah
Pishin
N
0 70 140 280
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Average Ecological Change
Negative
Erosion Propensity
Erosion-Prone Area > 20%
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
WFP
wfp.org


Balochistan
Integrated Context Analysis - Areas
Population Density > 10 persons/km²
FATA
AFGHANISTAN
IRAN
PUNJAB
SINDH
Zhob
Sherani
Killa Saifullah
Musakhel
Killa Abdullah
Pishin
Quetta
Ziarat
Harnai
Loralai
Mastung
Sibi
Kohlu
Barkhan
Nushki
Kachhi
Chagai
Kalat
Lehri
Dera Bugti
Kharan
Jhal Magsi
Nasirabad
Sohbatpur
Jaffarabad
Washuk
Khuzdar
Panjgur
Awaran
Kech
Lasbela
Gwadar
N
0 70 140 280
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
Province Boundaries
Shaded areas indicate where population density is greater than 10 persons per km².
WFP
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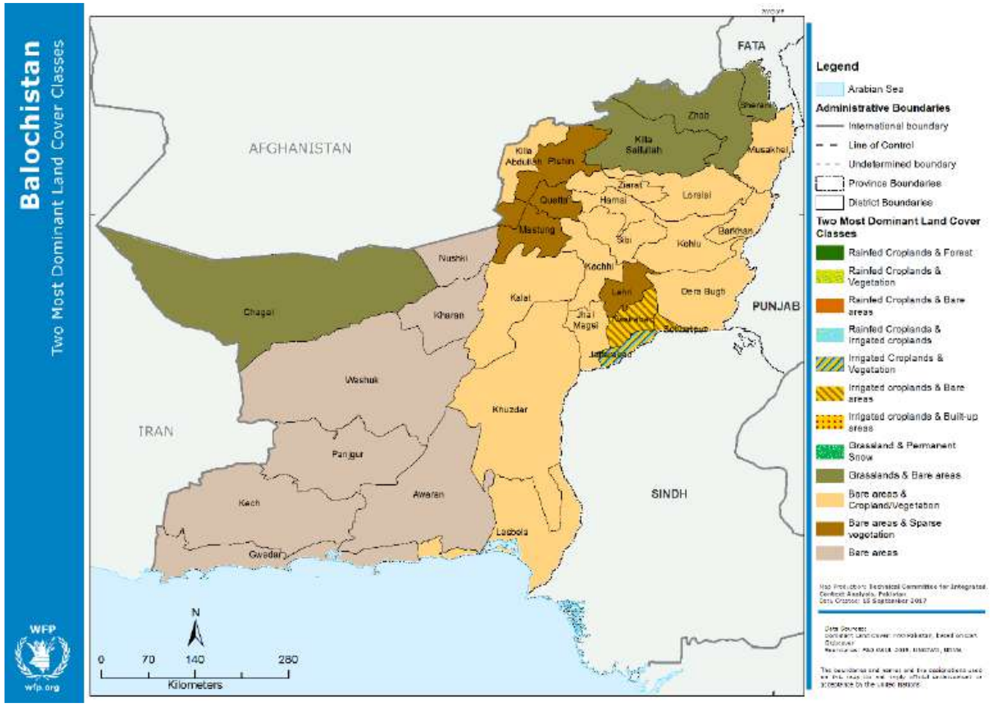
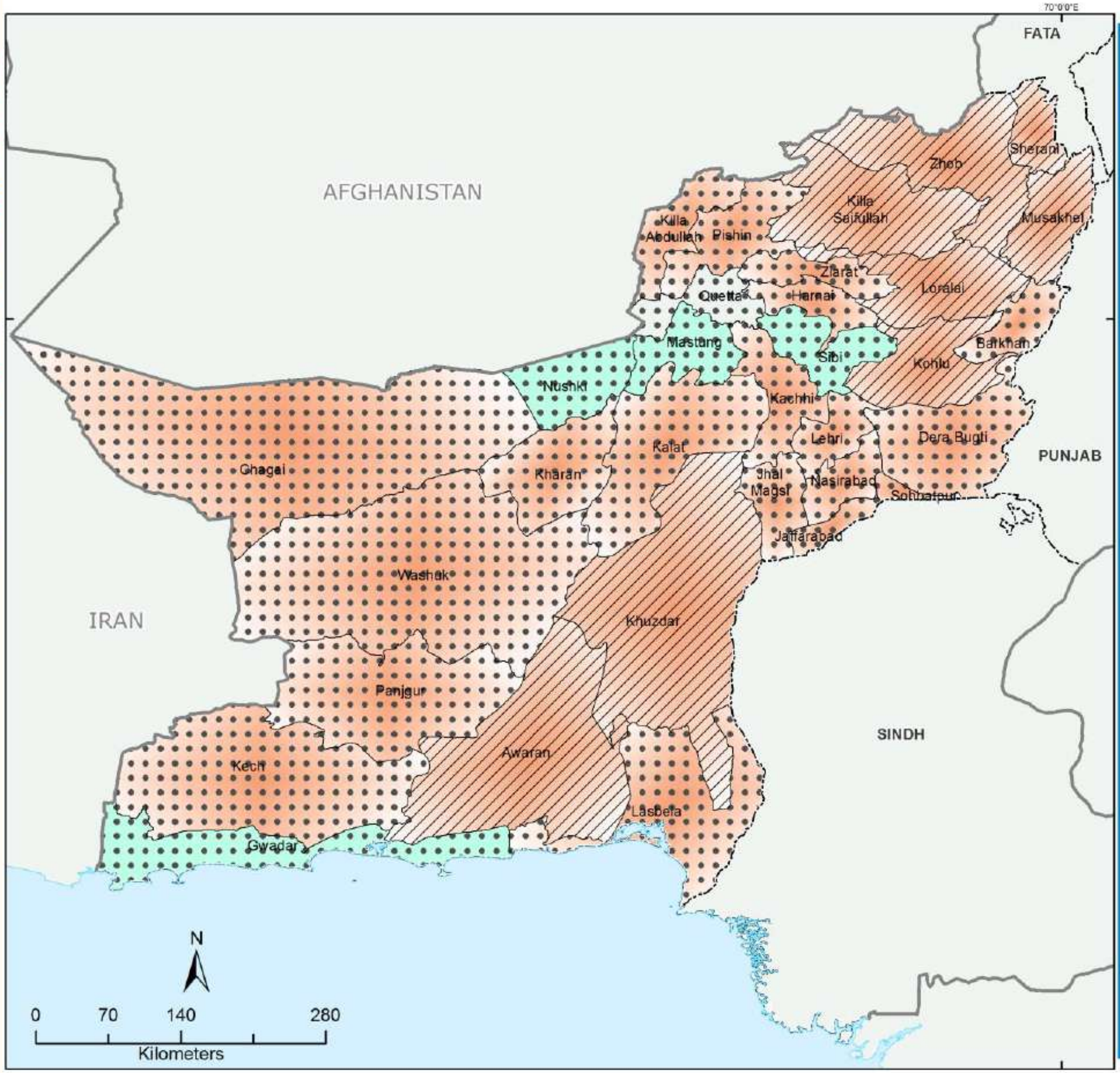

Balochistan
Two Most Dominant Land Cover Classes
FATA
AFGHANISTAN
IRAN
PUNJAB
SINDH
Zhob
Sherani
Killa Saifullah
Musakhel
Killa Abdullah
Pishin
Quetta
Ziarat
Harnai
Loralai
Mastung
Sibi
Kohlu
Barkhan
Nushki
Kachhi
Chagai
Kalat
Lehri
Dera Bugti
Kharan
Jhal Magsi
Nasirabad
Sohbatpur
Jaffarabad
Washuk
Khuzdar
Panjgur
Awaran
Kech
Lasbela
Gwadar
N
0 70 140 280
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Two Most Dominant Land Cover Classes
Rainfed Croplands & Forest
Rainfed Croplands & Vegetation
Rainfed Croplands & Bare areas
Rainfed Croplands & Irrigated croplands
Irrigated Croplands & Vegetation
Irrigated croplands & Bare areas
Irrigated croplands & Built-up areas
Grassland & Permanent Snow
Grasslands & Bare areas
Bare areas & Cropland/Vegetation
Bare areas & Sparse vegetation
Bare areas
WFP
wfp.org

Balochistan
Integrated Context Analysis
Broad Programmatic Recommendations



Legend

Arabian Sea

Administrative Boundaries

- International boundary
- Line of Control
- Undetermined boundary
- Province Boundaries
- District Boundaries

Broad Programmatic Recommendations

- Broad DRR
- Early warning and disaster preparedness
- Flexible food security safety nets or livelihood recovery
- Year round food security safety nets

Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Programmatic Recommendations: National consultations based on Technical Findings of ICA 2017

Boundaries: FAO GAUL 2015, UNGIWG, NDMA

The boundaries and names and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

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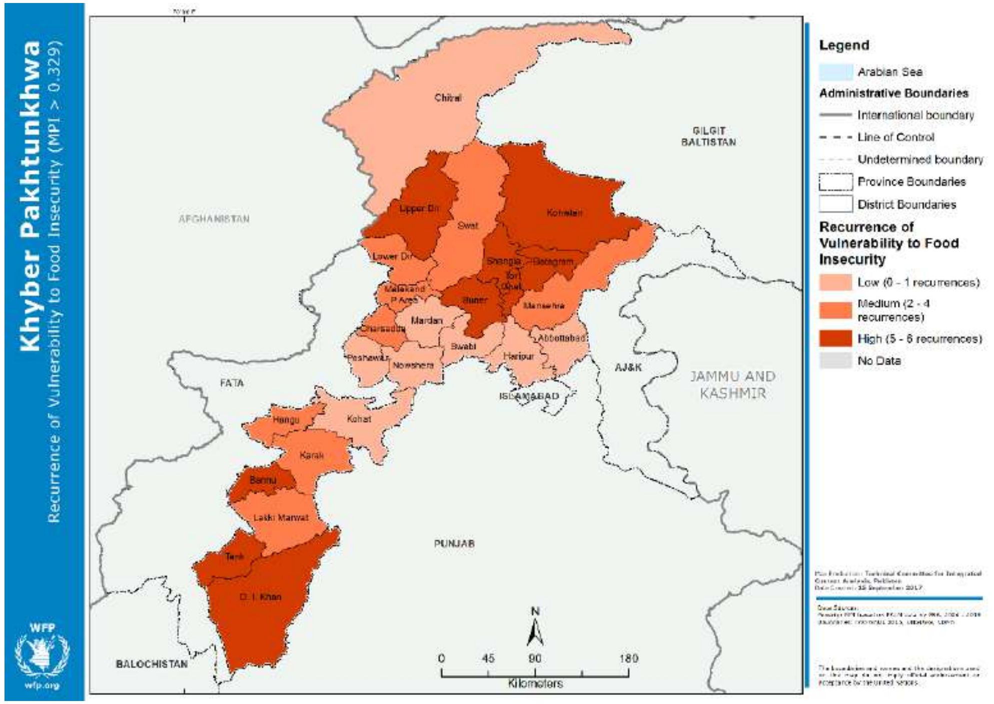
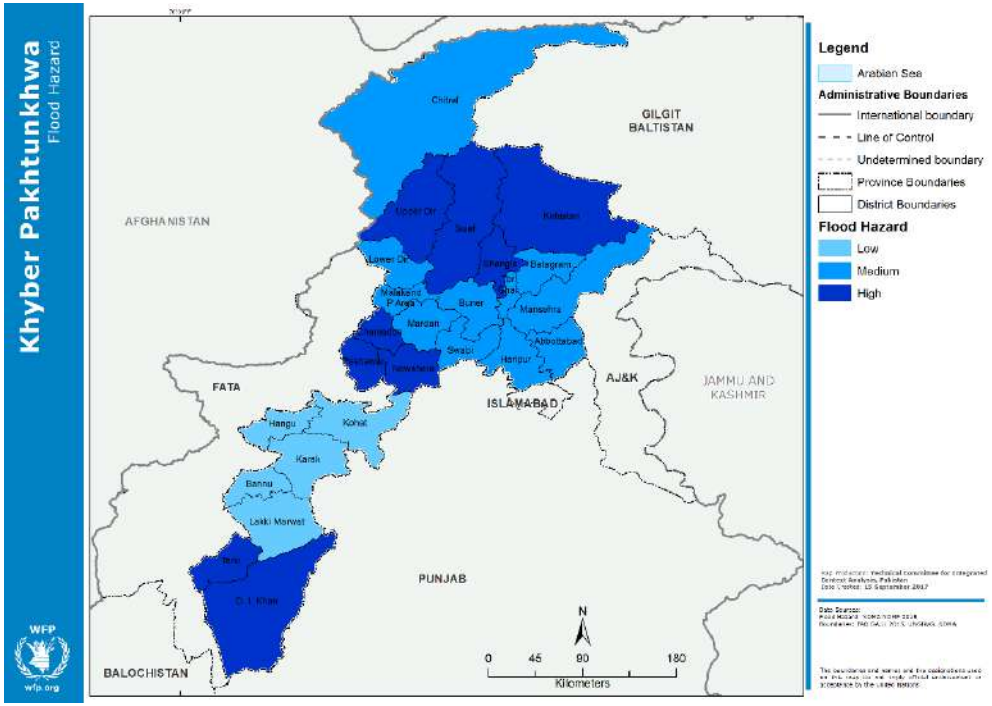
ICA Collecting Table – Khyber Pakhtunkhwa

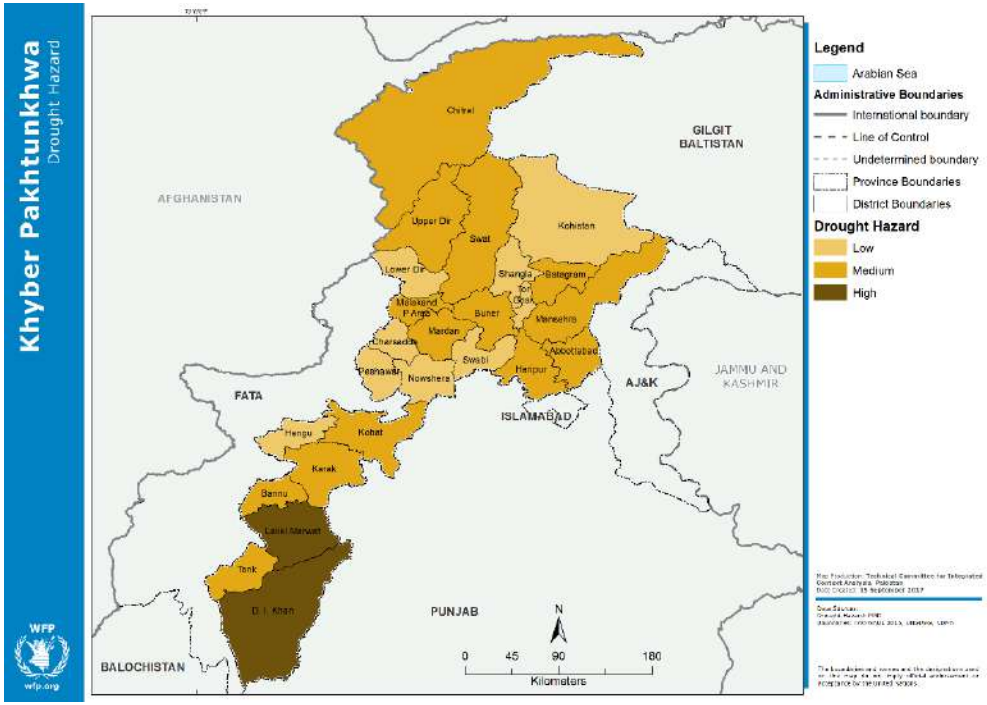
District	Vulnerability to Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Vulnerability to Food Insecurity with Final Natural Hazard Classification		Estimated vulnerable population to food insecurity based on Multi-dimensional Poverty Index (MPI) = Incidence x Intensity, derived from 6 datasets of Pakistan Social and Living Measurement surveys (2004/05, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15)				Total projected population for 2015/16 *(from Provincial Bureaux of Statistics)*	Core Lenses				
	Classification of Recurrence of High Vulnerability to Food Insecurity (MPI > 0.329): *Low = 0-2 recurrences, Medium = 3-4 recurrences, High = 5-6 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification (*Flood & Drought)*	ICA Categories	ICA Areas	Long-term average population vulnerable to food insecurity *(Average of all PSLM rounds)*	Estimated chronically vulnerable population to food insecurity *(Average of 2 lowest PSLM rounds)*	Estimated highest number of vulnerable population to food insecurity *(Average of 2 highest PSLM rounds)*	Estimated potential additional vulnerable population to food insecurity in case of some MPI dimensions significantly deteriorate *(Average of 2 highest PSLM rounds Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Batagram	High	Medium	Medium	Medium	Category 1	Area 1b	156273	119778	188496	32224	469057	3	3	3	4	13
Buner	High	Medium	Medium	Medium	Category 1	Area 1b	308548	275766	341671	33123	994325	3	1	2	4	10
D. I. Khan	High	High	High	High	Category 1	Area 1a	500874	451362	534374	33500	1511451	1	1	1	1	4
Kohistan	High	High	Low	Medium	Category 1	Area 1b	294835	279222	312201	17366	480189	4	3	3	2	12
Shangla	High	High	Low	Medium	Category 1	Area 1b	274704	244418	308726	34021	771366	3	3	3	4	13
Tank	High	High	Medium	High	Category 1	Area 1a	143042	130367	154468	11426	412718	1	1	2	1	5
Upper Dir	High	High	Medium	High	Category 1	Area 1a	370492	329029	401936	31444	935759	4	3	3	3	13
Charsadda	Medium	High	Low	Medium	Category 2	Area 2b	411837	351496	475963	64126	1696319	3	1	2	1	7
Lakki Marwat	Medium	Low	High	Medium	Category 2	Area 2b	280309	256613	311527	31218	853459	2	1	2	1	6
Malakand P Area	Medium	Medium	Medium	Medium	Category 2	Area 2b	166397	118652	210987	44590	815423	2	1	3	4	10
Mansehra	Medium	Medium	Medium	Medium	Category 2	Area 2b	419292	362163	475149	55857	1759799	4	3	3	4	14
Swat	Medium	High	Medium	High	Category 2	Area 2a	581363	504148	660628	79265	2271052	4	3	3	3	13
Bannu	High	Low	Medium	Low	Category 3	Area 3a	325430	301565	344325	18895	1110284	2	1	2	1	6
Hangu	Medium	Low	Low	Low	Category 3	Area 3b	142597	129842	153901	11304	556350	3	1	2	3	9
Karak	Medium	Low	Medium	Low	Category 3	Area 3b	208051	179314	249268	41218	763342	3	1	2	3	9
Lower Dir	Medium	Medium	Low	Low	Category 3	Area 3b	324001	262116	392544	68544	1307230	3	1	3	4	11
Tor Ghar	High	Medium	Low	Low	Category 3	Area 3a						3	3	3	4	13
Abbottabad	Low	Medium	Medium	Medium	Category 4	Area 4b	195566	153009	231995	36429	1214735	4	1	3	4	12
Chitral	Low	Medium	Medium	Medium	Category 4	Area 4b	105740	80055	126089	20349	496732	4	4	4	3	15

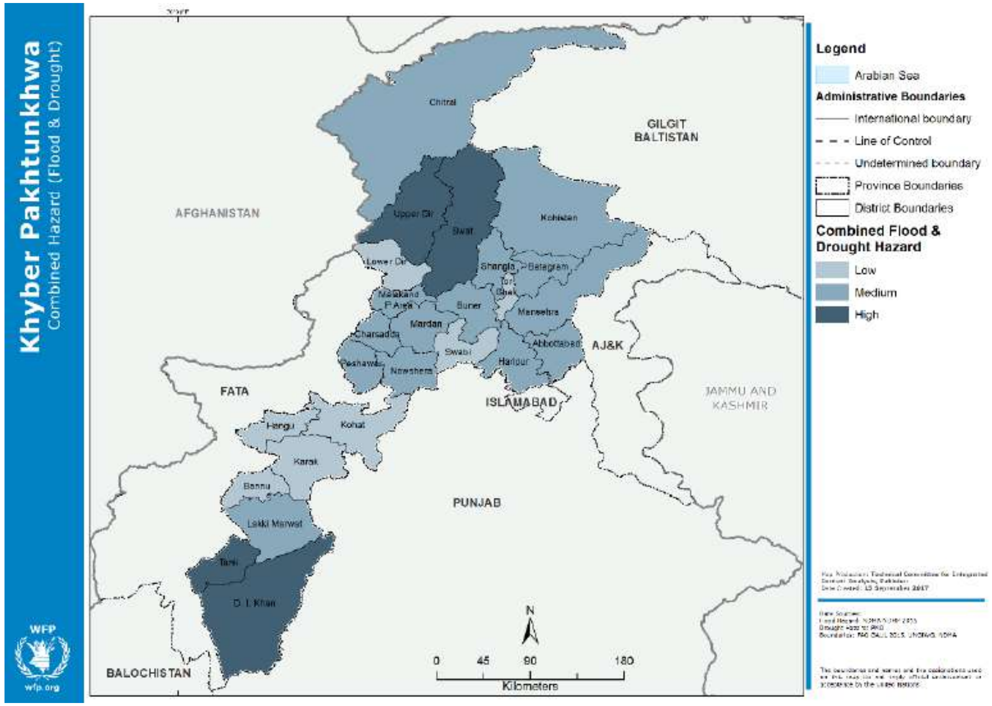
District	Vulnerability to Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Vulnerability to Food Insecurity with Final Natural Hazard Classification		Estimated vulnerable population to food insecurity based on Multi-dimensional Poverty Index (MPI) = Incidence x Intensity, derived from 6 datasets of Pakistan Social and Living Measurement surveys (2004/05, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15)				Total projected population for 2015/16 *(from Provincial Bureaux of Statistics)*	Core Lenses				
	Classification of Recurrence of High Vulnerability to Food Insecurity (MPI > 0.329): *Low = 0-2 recurrences, Medium = 3-4 recurrences, High = 5-6 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification *(Flood & Drought)*	ICA Categories	ICA Areas	Long-term average population vulnerable to food insecurity *(Average of all PSLM rounds)*	Estimated chronically vulnerable population to food insecurity *(Average of 2 lowest PSLM rounds)*	Estimated highest number of vulnerable population to food insecurity *(Average of 2 highest PSLM rounds)*	Estimated potential additional vulnerable population to food insecurity in case of some MPI dimensions significantly deteriorate *(Average of 2 highest PSLM rounds Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Haripur	Low	Medium	Medium	Medium	Category 4	Area 4b	154427	105264	221488	67061	1018625	4	1	2	4	11
Mardan	Low	Medium	Medium	Medium	Category 4	Area 4b	494257	431263	547193	52937	2477708	3	1	2	2	8
Nowshera	Low	High	Low	Medium	Category 4	Area 4b	252314	221101	293461	41147	1455809	3	1	2	3	9
Peshawar	Low	High	Low	Medium	Category 4	Area 4b	565947	406032	709295	143348	3767788	3	1	2	1	7
Kohat	Low	Low	Medium	Low	Category 5	Area 5	214986	197342	237597	22612	995225	2	1	2	3	8
Swabi	Low	Medium	Low	Low	Category 5	Area 5	362120	311388	422970	60850	1727536	3	1	2	2	8

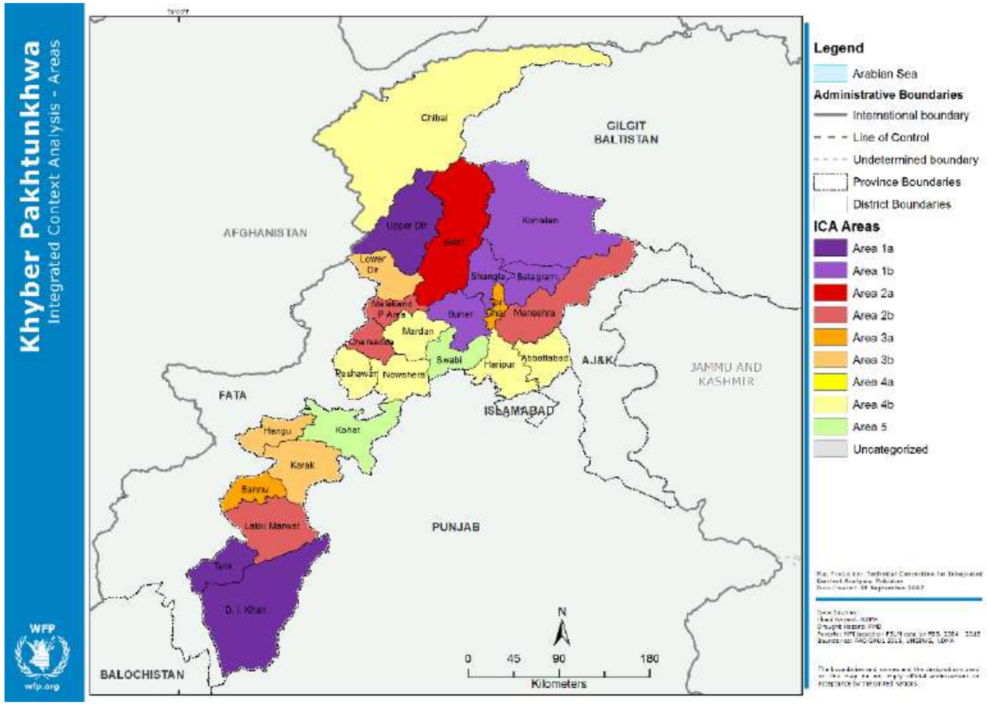
ICA Outcome Maps – Khyber Pakhtunkhwa

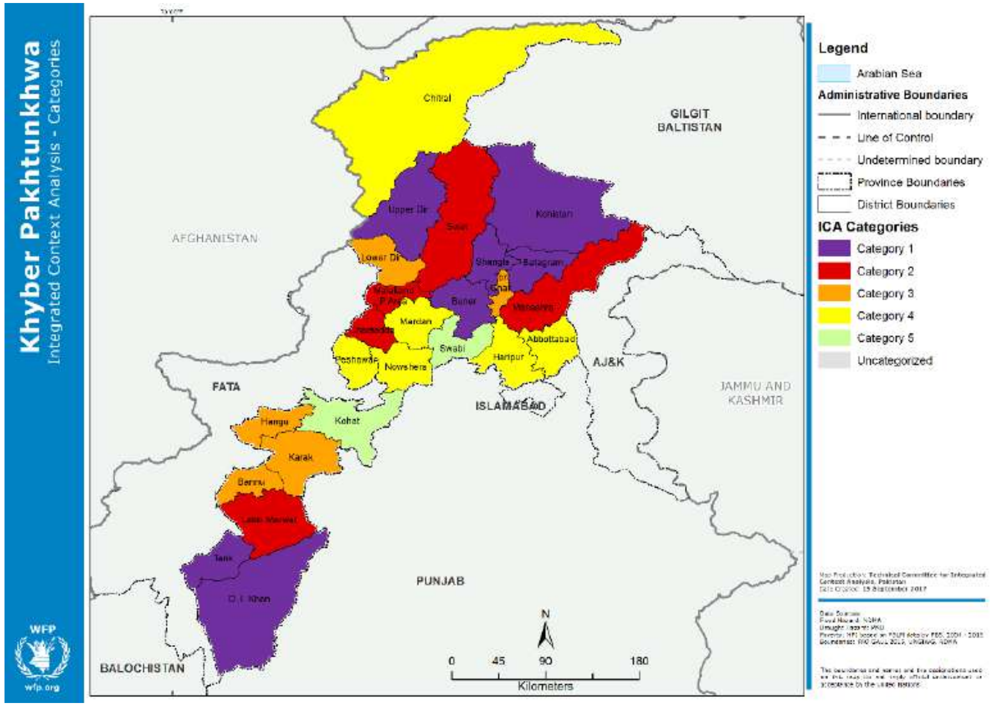


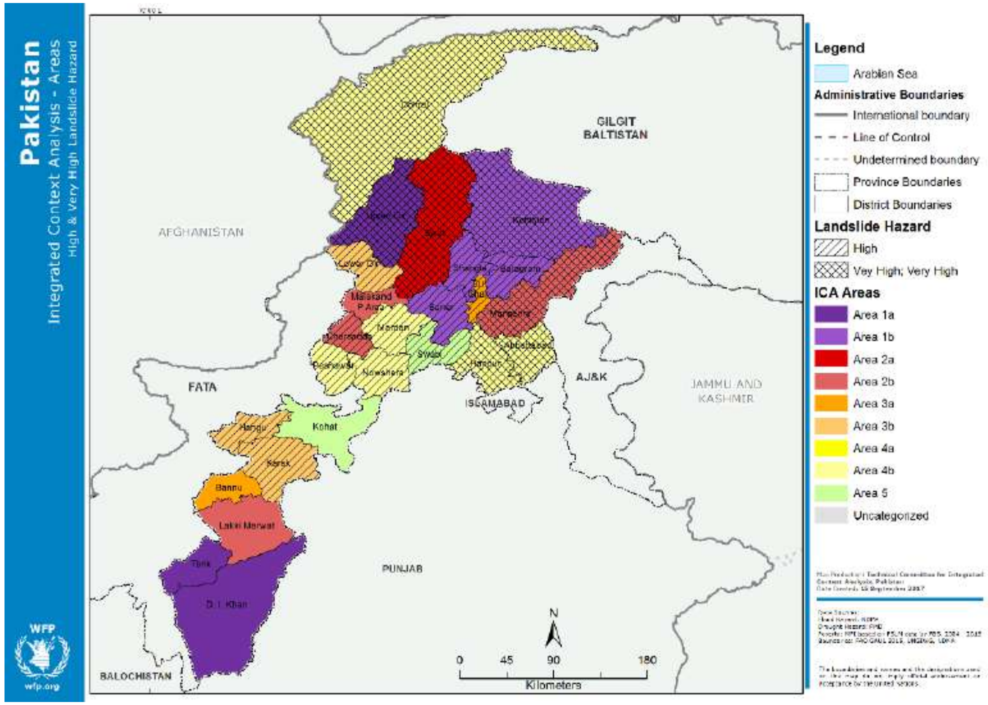


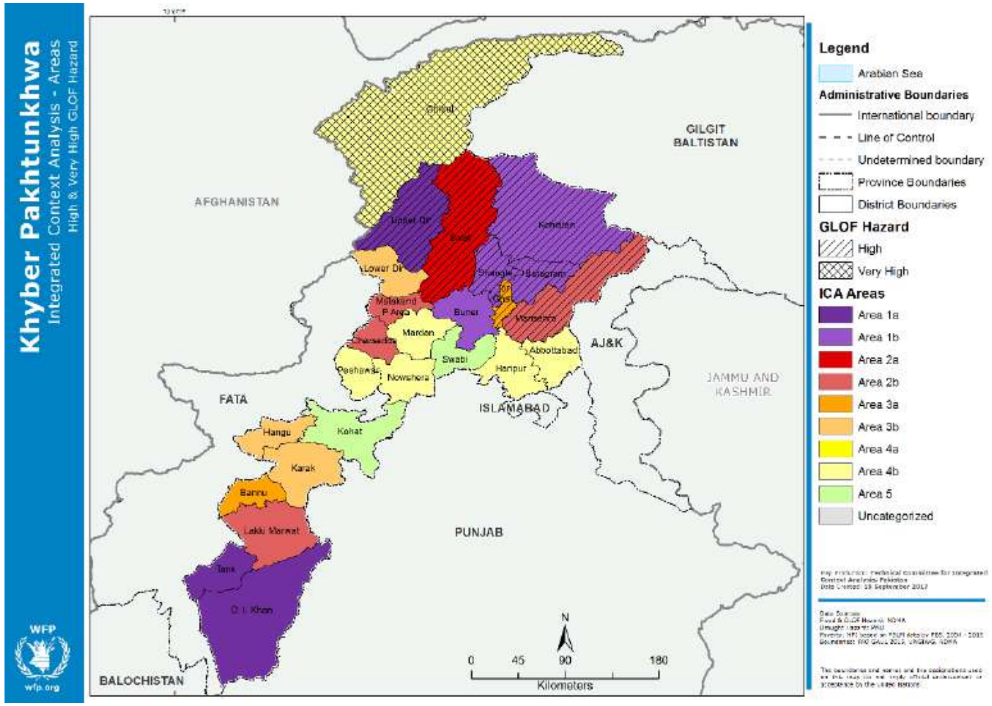

Khyber Pakhtunkhwa
Drought Hazard
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Drought Hazard
Low
Medium
High
AFGHANISTAN
GILGIT BALTISTAN
FATA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
BALOCHISTAN
Chitral
Upper Dir
Swat
Kohistan
Lower Dir
Shangla
Batagram
Malakand P Area
Buner
Mansehra
Charsadda
Mardan
Abbottabad
Peshawar
Nowshera
Swabi
Haripur
Hangu
Kohat
Karak
Bannu
Lakki Marwat
Tank
D. I. Khan
N
0 45 90 180
Kilometers
WFP
wfp.org

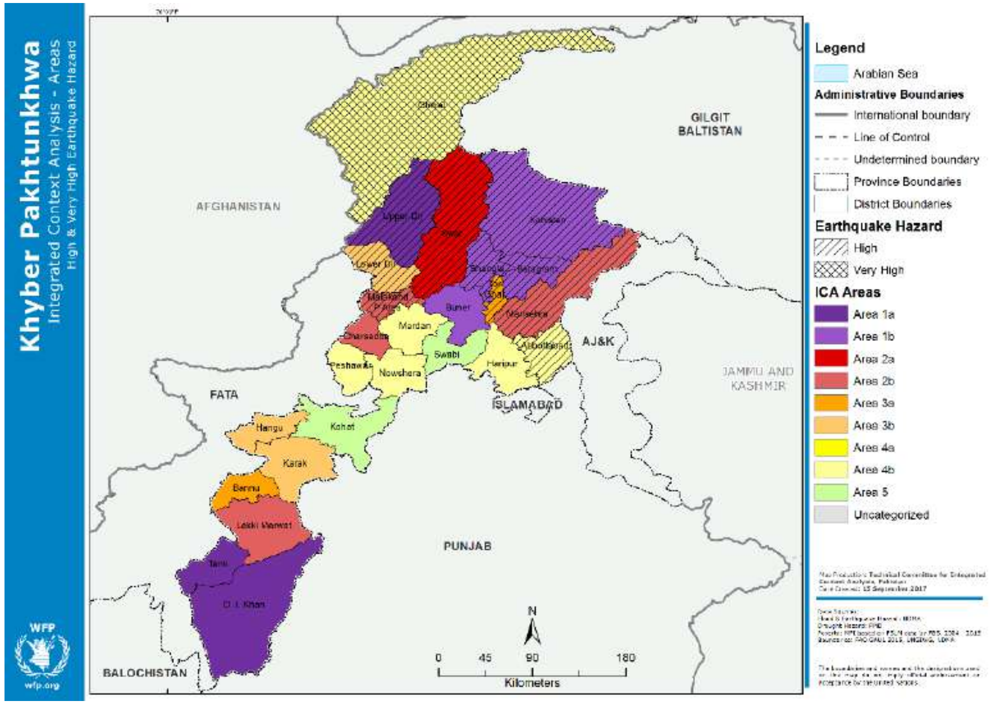

Khyber Pakhtunkhwa
Combined Hazard (Flood & Drought)
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Combined Flood & Drought Hazard
Low
Medium
High
AFGHANISTAN
GILGIT BALTISTAN
FATA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
BALOCHISTAN
Chitral
Upper Dir
Swat
Kohistan
Lower Dir
Shangla
Batagram
Tor Ghar
Malakand P Area
Buner
Mansehra
Charsadda
Mardan
Abbottabad
Peshawar
Nowshera
Swabi
Haripur
Hangu
Kohat
Karak
Bannu
Lakki Marwat
Tank
D. I. Khan
N
0 45 90 180
Kilometers
WFP
wfp.org


Khyber Pakhtunkhwa
Integrated Context Analysis - Areas
Chitral
GILGIT BALTISTAN
AFGHANISTAN
Upper Dir
Swat
Kohistan
Lower Dir
Shangla
Batagram
Buner
Mansehra
Mardan
Charsadda
Swabi
Haripur
Abbottabad
AJ&K
Peshawar
Nowshera
JAMMU AND KASHMIR
FATA
ISLAMABAD
Hangu
Kohat
Karak
Bannu
Lakki Marwat
PUNJAB
Tank
D. I. Khan
BALOCHISTAN
N
0 45 90 180
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized


Khyber Pakhtunkhwa
Integrated Context Analysis - Categories
Chitral
GILGIT BALTISTAN
AFGHANISTAN
Upper Dir
Swat
Kohistan
Lower Dir
Shangla
Batagram
Buner
Mansehra
Mardan
Swabi
Haripur
Abbottabad
AJ&K
Peshawar
Nowshera
JAMMU AND KASHMIR
FATA
ISLAMABAD
Hangu
Kohat
Karak
Bannu
Lakki Marwat
PUNJAB
Tank
D. I. Khan
BALOCHISTAN
N
0 45 90 180
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Categories
Category 1
Category 2
Category 3
Category 4
Category 5
Uncategorized


Pakistan
Integrated Context Analysis - Areas
High & Very High Landslide Hazard
AFGHANISTAN
GILGIT BALTISTAN
FATA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
BALOCHISTAN
Lower Dir
Malakand P Area
Mardan
Swabi
Nowshera
Kohat
Hangu
Karak
Bannu
Lakki Marwat
Tank
D.I. Khan
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Landslide Hazard
High
Vey High; Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
N
0 45 90 180
Kilometers
WFP
wfp.org


Khyber Pakhtunkhwa
Integrated Context Analysis - Areas
High & Very High GLOF Hazard
AFGHANISTAN
GILGIT BALTISTAN
FATA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
BALOCHISTAN
Chitral
Upper Dir
Lower Dir
Kohistan
Swat
Shangla
Batagram
Buner
Mansehra
Malakand P Area
Charsadda
Mardan
Peshawar
Nowshera
Swabi
Abbottabad
Haripur
Kohat
Hangu
Karak
Bannu
Lakki Marwat
Tank
D.I. Khan
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
GLOF Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
N
0 45 90 180
Kilometers
WFP
wfp.org



Khyber Pakhtunkhwa
Integrated Context Analysis - Areas
High & Very High Earthquake Hazard
AFGHANISTAN
GILGIT BALTISTAN
FATA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
BALOCHISTAN
Chitral
Upper Dir
Swat
Kohistan
Lower Dir
Shangla
Batagram
Malakand P'Area
Buner
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Mansehra
Charsadda
Mardan
Swabi
Abbottabad
Peshawar
Nowshera
Haripur
Kohat
Hangu
Karak
Bannu
Lakki Marwat
Tank
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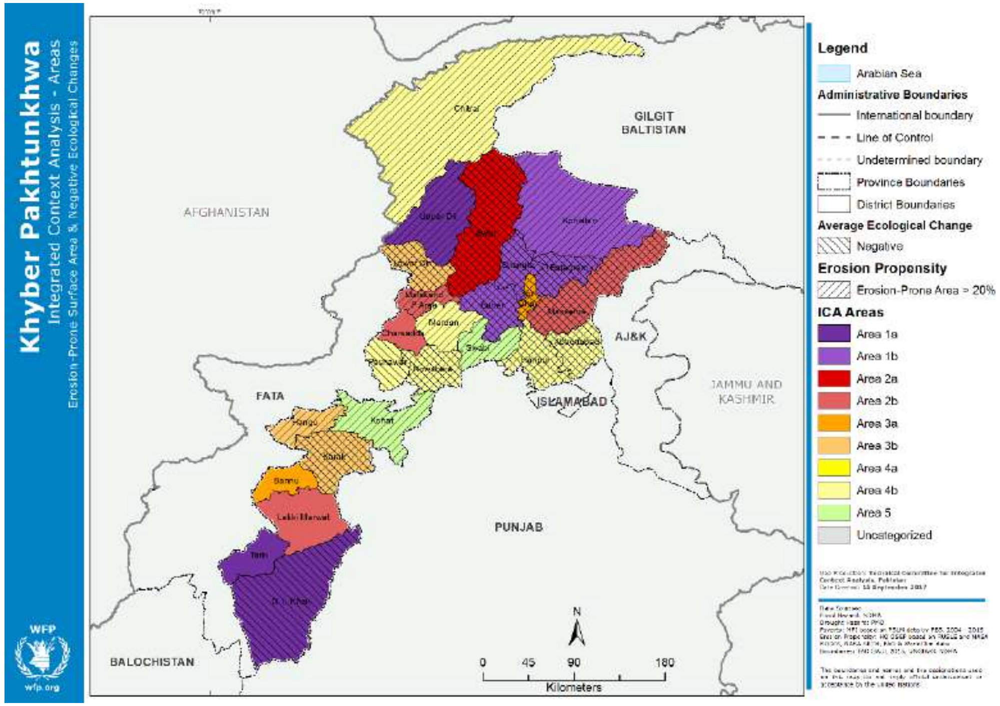
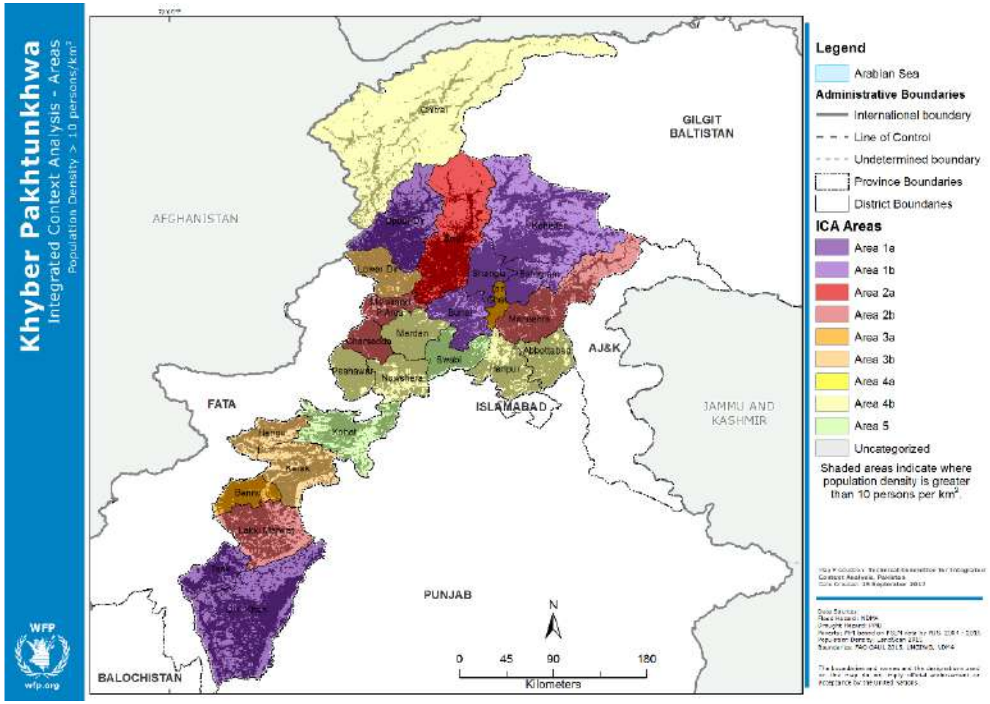
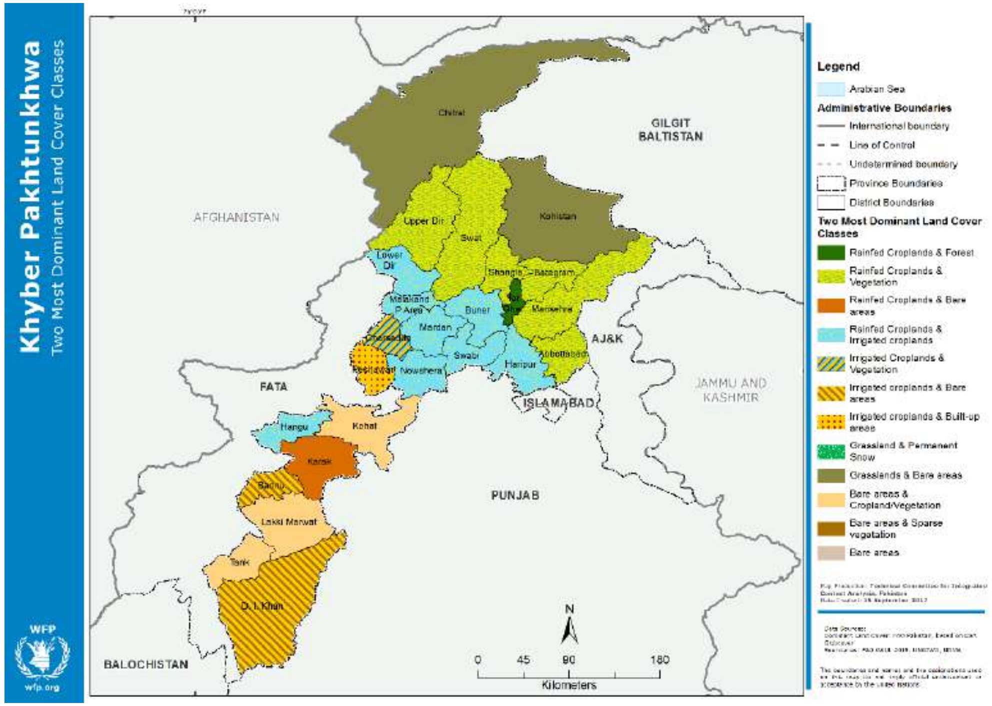
0 45 90 180
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Earthquake Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized

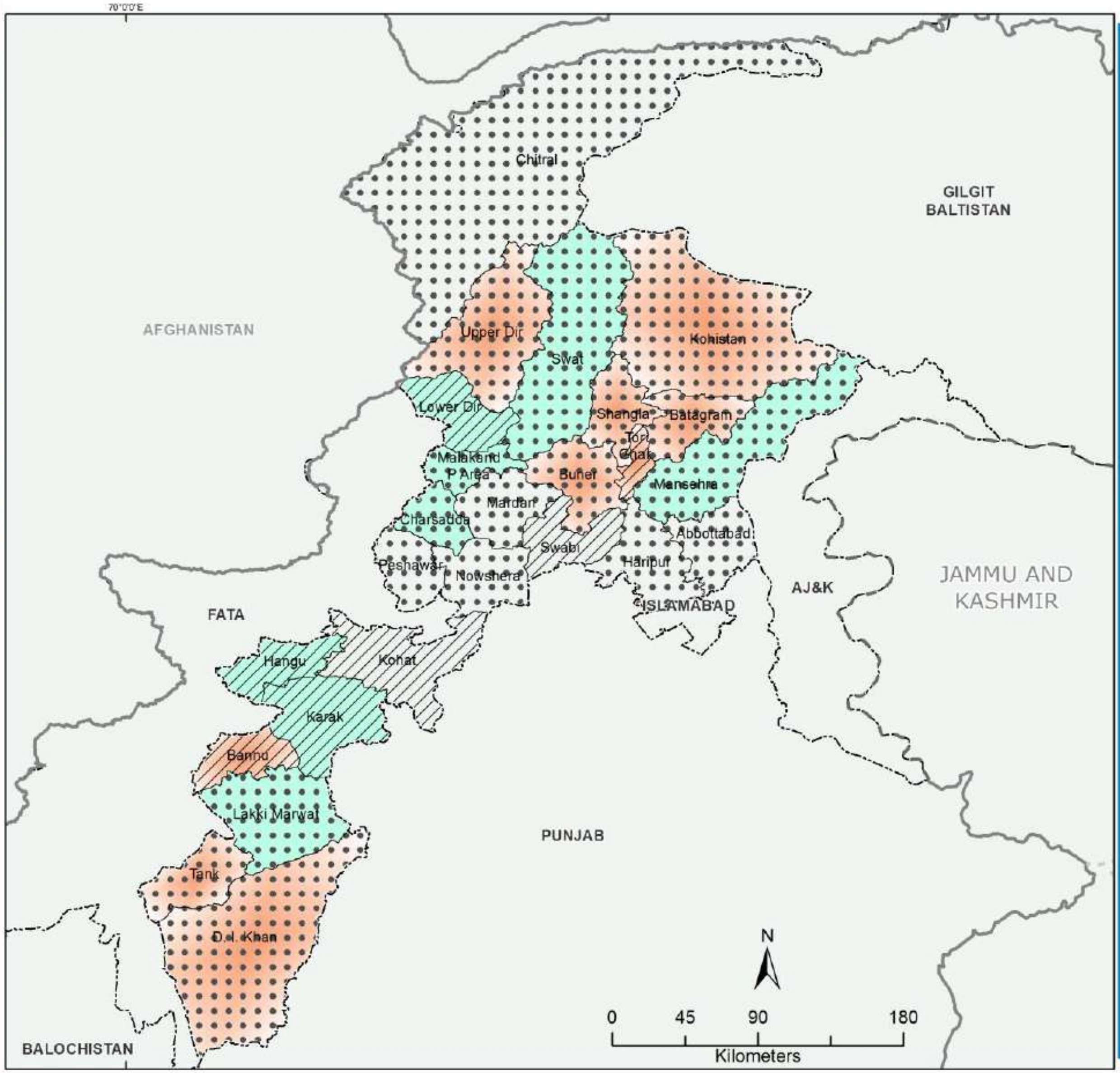


Khyber Pakhtunkhwa
Integrated Context Analysis - Areas
Erosion-Prone Surface Area & Negative Ecological Changes
AFGHANISTAN
GILGIT BALTISTAN
FATA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
BALOCHISTAN
Chitral
Upper Dir
Swat
Kohistan
Lower Dir
Shangla
Batagram
Malakand P'Area
Buner
Mansehra
Charsadda
Mardan
Swabi
Abbottabad
Peshawar
Nowshera
Haripur
Kohat
Hangu
Karak
Bannu
Lakki Marwat
Tank
D. I. Khan
N
0 45 90 180
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Average Ecological Change
Negative
Erosion Propensity
Erosion-Prone Area > 20%
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized


Khyber Pakhtunkhwa
Integrated Context Analysis - Areas
Population Density > 10 persons/km²
AFGHANISTAN
GILGIT
BALTISTAN
FATA
AJ&K
ISLAMABAD
JAMMU AND
KASHMIR
PUNJAB
BALOCHISTAN
0 45 90 180
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
Shaded areas indicate where population density is greater than 10 persons per km².
WFP
wfp.org


Khyber Pakhtunkhwa
Two Most Dominant Land Cover Classes
AFGHANISTAN
GILGIT
BALTISTAN
Chitral
Upper Dir
Swat
Kohistan
Lower Dir
Shangla
Batagram
Malakand P Area
Buner
Mansehra
Charsadda
Mardan
Swabi
Abbottabad
Peshawar
Nowshera
Haripur
FATA
ISLAMABAD
AJ&K
JAMMU AND
KASHMIR
Hangu
Kohat
Karak
Bannu
Lakki Marwat
Tank
D.I. Khan
PUNJAB
BALOCHISTAN
0 45 90 180
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Two Most Dominant Land Cover Classes
Rainfed Croplands & Forest
Rainfed Croplands & Vegetation
Rainfed Croplands & Bare areas
Rainfed Croplands & Irrigated croplands
Irrigated Croplands & Vegetation
Irrigated croplands & Bare areas
Irrigated croplands & Built-up areas
Grassland & Permanent Snow
Grasslands & Bare areas
Bare areas & Cropland/Vegetation
Bare areas & Sparse vegetation
Bare areas
WFP
wfp.org

Khyber Pakhtunkhwa
Integrated Context Analysis
Broad Programmatic Recommendations



Legend

Arabian Sea

Administrative Boundaries

- International boundary
- Line of Control
- Undetermined boundary
- Province Boundaries
- District Boundaries

Broad Programmatic Recommendations

- Broad DRR
- Early warning and disaster preparedness
- Flexible food security safety nets or livelihood recovery
- Year round food security safety nets

Map Production: **Technical Committee for Integrated Context Analysis, Pakistan**
Date Created: **15 September 2017**

Data Sources:
Programmatic Recommendations: National consultations based on Technical Findings of ICA 2017

Boundaries: FAO GAUL 2015, UNGIWG, NDMA

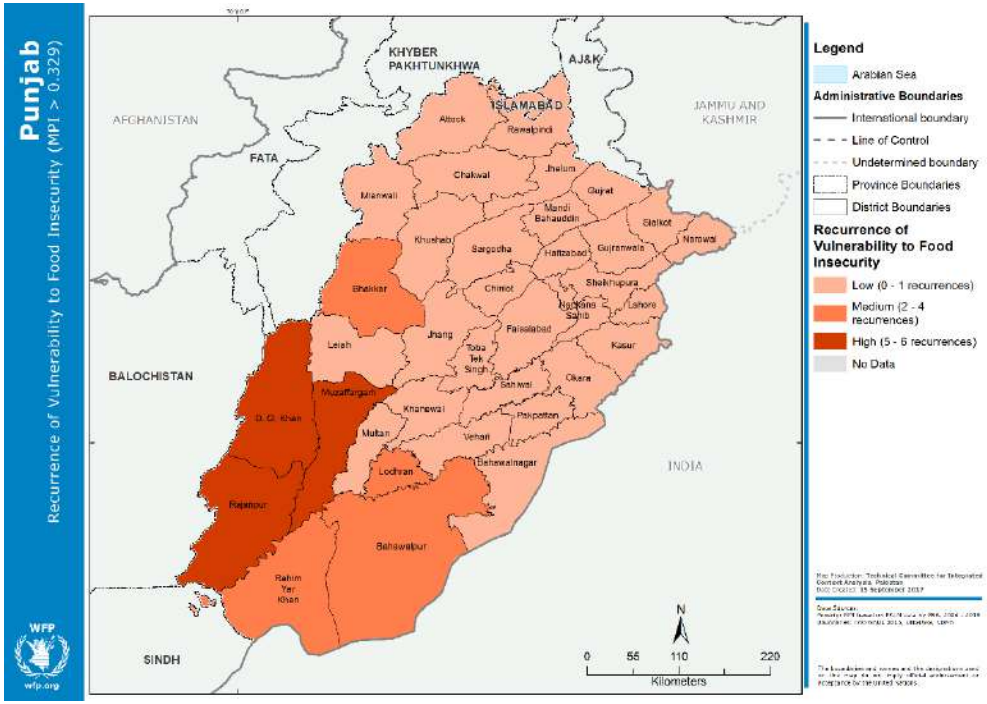
The boundaries and names and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

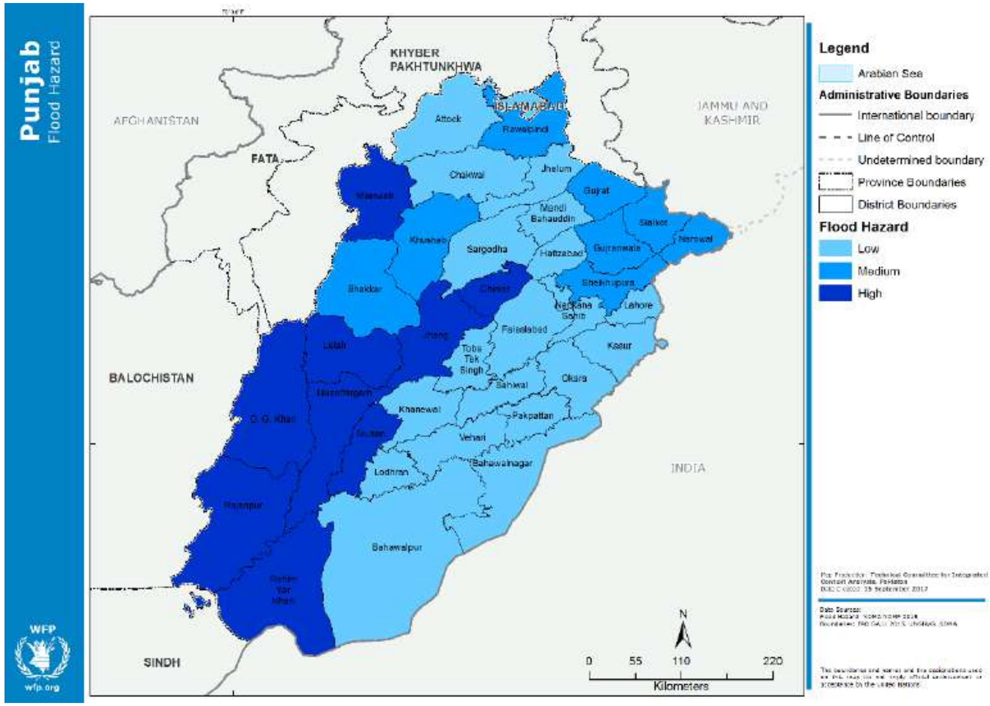
ICA Collecting Table – Punjab

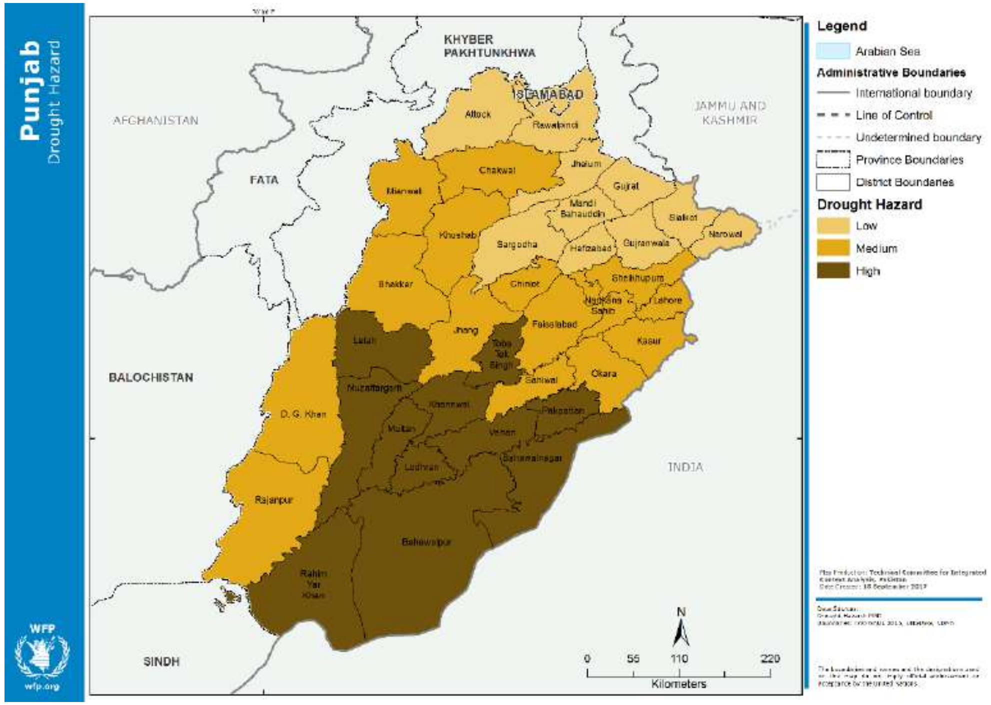
District	Vulnerability to Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Vulnerability to Food Insecurity with Final Natural Hazard Classification		Estimated vulnerable population to food insecurity based on Multi-dimensional Poverty Index (MPI) = Incidence x Intensity, derived from 6 datasets of Pakistan Social and Living Measurement surveys (2004/05, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15)				Total projected population for 2015/16 *(from Provincial Bureaux of Statistics)*	Core Lenses				
	Classification of Recurrence of High Vulnerability to Food Insecurity (MPI > 0.329): *Low = 0-2 recurrences, Medium = 3-4 recurrences, High = 5-6 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification *(Flood & Drought)*	ICA Categories	ICA Areas	Long-term average population vulnerable to food insecurity *(Average of all PSLM rounds)*	Estimated chronically vulnerable population to food insecurity *(Average of 2 lowest PSLM rounds)*	Estimated highest number of vulnerable population to food insecurity *(Average of 2 highest PSLM rounds)*	Estimated potential additional vulnerable population to food insecurity in case of some MPI dimensions significantly deteriorate *(Average of 2 highest PSLM rounds Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Dera Ghazi Khan	High	High	Medium	High	Category 1	Area 1a	902985	808872	1012917	109932	2439000	1	1	1	1	4
Muzaffargarh	High	High	High	High	Category 1	Area 1a	1378884	1259196	1478851	99967	3941000	1	1	1	1	4
Rajanpur	High	High	Medium	High	Category 1	Area 1a	649237	571518	760565	111328	1632000	1	1	1	1	4
Bahawalpur	Medium	Low	High	Medium	Category 2	Area 2b	979993	912800	1023782	43790	3517000	1	1	1	1	4
Bhakkar	Medium	Medium	Medium	Medium	Category 2	Area 2b	445644	383445	482863	37219	1459000	1	1	1	1	4
Lodhran	Medium	Low	High	Medium	Category 2	Area 2b	464541	396811	538099	73558	1631000	1	1	1	1	4
Rahim Yar Khan	Medium	High	High	High	Category 2	Area 2a	1412294	1282643	1538877	126583	4604000	1	1	1	1	4
Bahawalnagar	Low	Low	High	Medium	Category 4	Area 4b	684930	623334	744970	60039	2761000	1	1	1	1	4
Chiniot	Low	High	Medium	High	Category 4	Area 4a	245177	224604	264516	19338	1231000	1	1	1	1	4
Jhang	Low	High	Medium	High	Category 4	Area 4a	678138	478752	941822	263684	2454000	1	1	1	1	4
Khanewal	Low	Low	High	Medium	Category 4	Area 4b	681056	580380	762006	80949	2785000	1	1	1	1	4
Khushab	Low	Medium	Medium	Medium	Category 4	Area 4b	248512	214766	293204	44692	1164000	2	1	2	1	6
Leiah	Low	High	High	High	Category 4	Area 4a	398473	338569	469534	71061	1626000	1	1	1	1	4
Mianwali	Low	High	Medium	High	Category 4	Area 4a	348177	306586	383934	35757	1407000	3	1	2	1	7
Multan	Low	High	High	High	Category 4	Area 4a	925423	811768	1021958	96535	4332000	1	1	1	1	4
Pakpattan	Low	Low	High	Medium	Category 4	Area 4b	451949	369156	516066	64117	1744000	1	1	1	1	4
Sheikhupura	Low	Medium	Medium	Medium	Category 4	Area 4b	425289	294729	621659	196370	3123000	2	1	1	1	5
Toba Tek Singh	Low	Low	High	Medium	Category 4	Area 4b	342155	218490	468258	126103	2103000	1	1	1	1	4
Vehari	Low	Low	High	Medium	Category 4	Area 4b	635881	557896	729139	93258	2895000	1	1	1	1	4

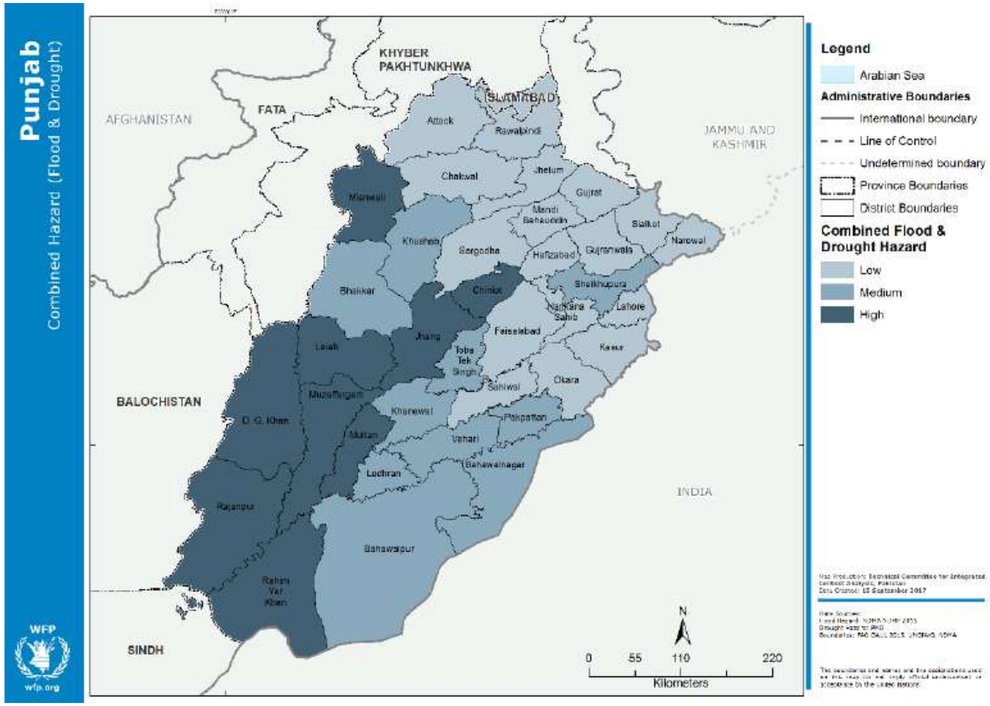
District	Vulnerability to Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Vulnerability to Food Insecurity with Final Natural Hazard Classification		Estimated vulnerable population to food insecurity based on Multi-dimensional Poverty Index (MPI) = Incidence x Intensity, derived from 6 datasets of Pakistan Social and Living Measurement surveys (2004/05, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15)				Total projected population for 2015/16 *(from Provincial Bureaux of Statistics)*	Core Lenses				
	Classification of Recurrence of High Vulnerability to Food Insecurity (MPI > 0.329): *Low = 0-2 recurrences, Medium = 3-4 recurrences, High = 5-6 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification *(Flood & Drought)*	ICA Categories	ICA Areas	Long-term average population vulnerable to food insecurity *(Average of all PSLM rounds)*	Estimated chronically vulnerable population to food insecurity *(Average of 2 lowest PSLM rounds)*	Estimated highest number of vulnerable population to food insecurity *(Average of 2 highest PSLM rounds)*	Estimated potential additional vulnerable population to food insecurity in case of some MPI dimensions significantly deteriorate *(Average of 2 highest PSLM rounds Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Attock	Low	Low	Low	Low	Category 5	Area 5	176085	88184	247739	71654	1674000	3	1	2	3	9
Chakwal	Low	Low	Medium	Low	Category 5	Area 5	106204	69581	144533	38329	1384000	2	1	2	4	9
Faisalabad	Low	Low	Medium	Low	Category 5	Area 5	786024	597998	995295	209271	7358000	1	1	1	1	4
Gujranwala	Low	Medium	Low	Low	Category 5	Area 5	400012	310149	542846	142834	4788000	2	1	1	1	5
Gujrat	Low	Medium	Low	Low	Category 5	Area 5	230720	200173	267523	36804	2689000	2	1	2	1	6
Hafizabad	Low	Low	Low	Low	Category 5	Area 5	187427	153110	239585	52158	1098000	1	1	1	1	4
Jhelum	Low	Low	Low	Low	Category 5	Area 5	76752	38910	135784	59032	1211000	2	1	2	3	8
Kasur	Low	Low	Medium	Low	Category 5	Area 5	537946	402304	662011	124065	3262000	1	1	1	1	4
Lahore	Low	Low	Medium	Low	Category 5	Area 5	369221	213730	496661	127440	9545000	1	1	1	1	4
Mandi Bahauddin	Low	Low	Low	Low	Category 5	Area 5	236226	189717	281325	45098	1463000	1	1	2	1	5
Nankana Sahib	Low	Low	Medium	Low	Category 5	Area 5	203116	155309	250923	47807	1304000	2	1	1	1	5
Narowal	Low	Medium	Low	Low	Category 5	Area 5	311226	214486	398871	87645	1611000	1	1	2	1	5
Okara	Low	Low	Medium	Low	Category 5	Area 5	706774	576225	848657	141883	2996000	1	1	2	1	5
Rawalpindi	Low	Medium	Low	Low	Category 5	Area 5	238370	141303	367293	128922	4691000	4	1	2	4	11
Sahiwal	Low	Low	Medium	Low	Category 5	Area 5	481157	371543	575476	94319	2399000	1	1	1	1	4
Sargodha	Low	Low	Low	Low	Category 5	Area 5	687444	545891	790408	102964	3397000	2	1	1	1	5
Sialkot	Low	Medium	Low	Low	Category 5	Area 5	406800	277916	539468	132668	3673000	1	1	2	1	5
Islamabad	Low	Low	Low	Low	Category 5	Area 5	41,212	24,723	55,763	14,551	4,730,000	4	1	2	4	11

ICA Outcome Maps – Punjab






Punjab
Drought Hazard
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Drought Hazard
Low
Medium
High
KHYBER PAKHTUNKHWA
AFGHANISTAN
FATA
JAMMU AND KASHMIR
BALOCHISTAN
SINDH
INDIA
ISLAMABAD
Attock
Rawalpindi
Chakwal
Jhelum
Gujrat
Mianwali
Mandi Bahauddin
Sialkot
Narowal
Khushab
Sargodha
Hafizabad
Gujranwala
Bhakkar
Chiniot
Sheikhupura
Nankana Sahib
Lahore
Jhang
Faisalabad
Kasur
Layyah
Toba Tek Singh
Okara
Sahiwal
Muzaffargarh
Khanewal
Pakpattan
D. G. Khan
Multan
Vehari
Lodhran
Bahawalnagar
Rajanpur
Bahawalpur
Rahim Yar Khan
0 55 110 220
Kilometers
WFP
wfp.org


Punjab
Combined Hazard (Flood & Drought)
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Combined Flood & Drought Hazard
Low
Medium
High
KHYBER PAKHTUNKHWA
AFGHANISTAN
FATA
JAMMU AND KASHMIR
BALOCHISTAN
SINDH
INDIA
ISLAMABAD
Attock
Rawalpindi
Chakwal
Jhelum
Gujrat
Mianwali
Mandi Bahauddin
Sialkot
Narowal
Khushab
Sargodha
Hafizabad
Gujranwala
Bhakkar
Chiniot
Sheikhupura
Nankana Sahib
Lahore
Faisalabad
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Kasur
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Okara
Sahiwal
Muzaffargarh
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Multan
Vehari
Bahawalnagar
Lodhran
Rajanpur
Bahawalpur
Rahim Yar Khan
0 55 110 220
Kilometers
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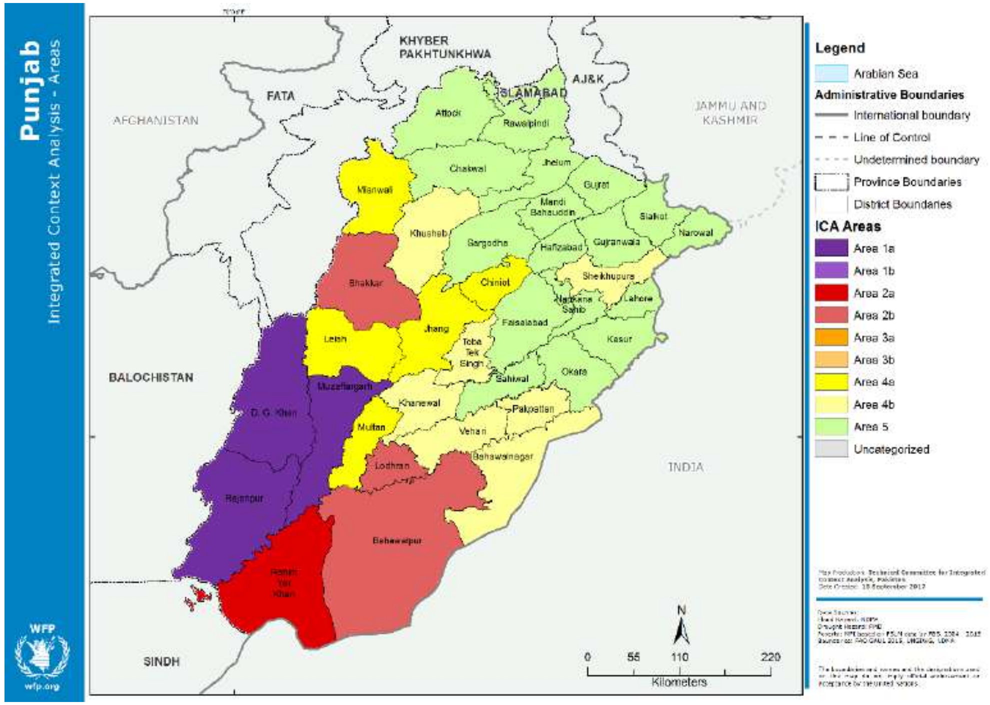
wfp.org


Punjab
Integrated Context Analysis - Areas
KHYBER PAKHTUNKHWA
FATA
AFGHANISTAN
ISLAMABAD
AJ&K
JAMMU AND KASHMIR
BALOCHISTAN
SINDH
INDIA
Attock
Rawalpindi
Chakwal
Jhelum
Mianwali
Gujrat
Mandi Bahauddin
Sialkot
Narowal
Khushab
Sargodha
Hafizabad
Gujranwala
Bhakkar
Chiniot
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Nankana Sahib
Lahore
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Multan
Vehari
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0 55 110 220
Kilometers
N
Legend
Arabian Sea
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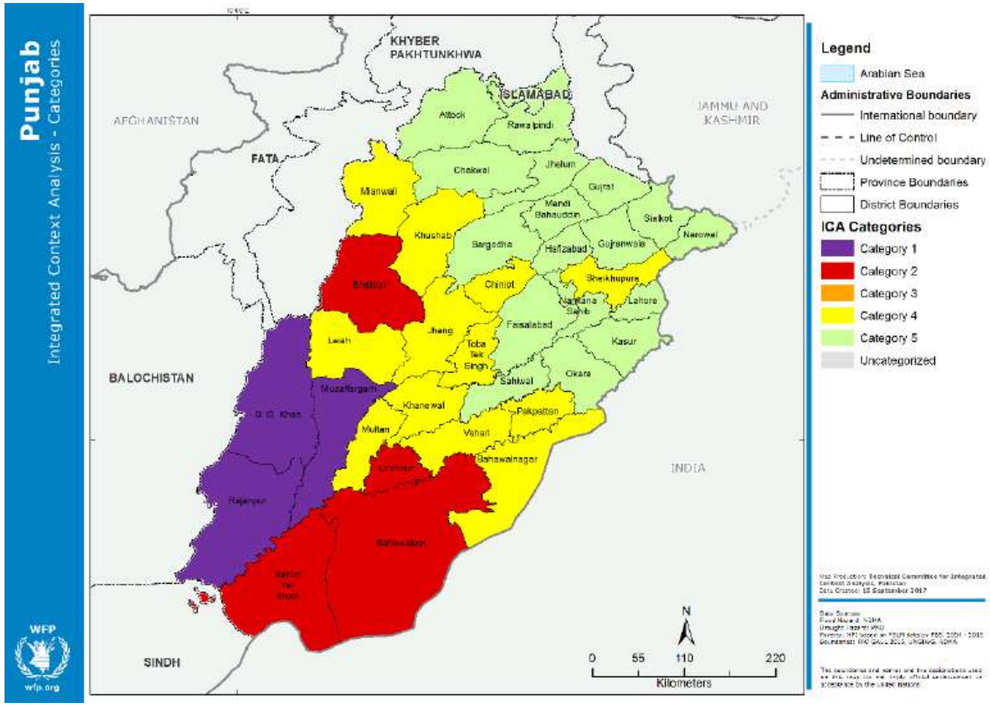
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
WFP
wfp.org


Punjab
Integrated Context Analysis - Categories
KHYBER PAKHTUNKHWA
FATA
AFGHANISTAN
ISLAMABAD
JAMMU AND KASHMIR
BALOCHISTAN
SINDH
INDIA
Attock
Rawalpindi
Chakwal
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District Boundaries
ICA Categories
Category 1
Category 2
Category 3
Category 4
Category 5
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WFP
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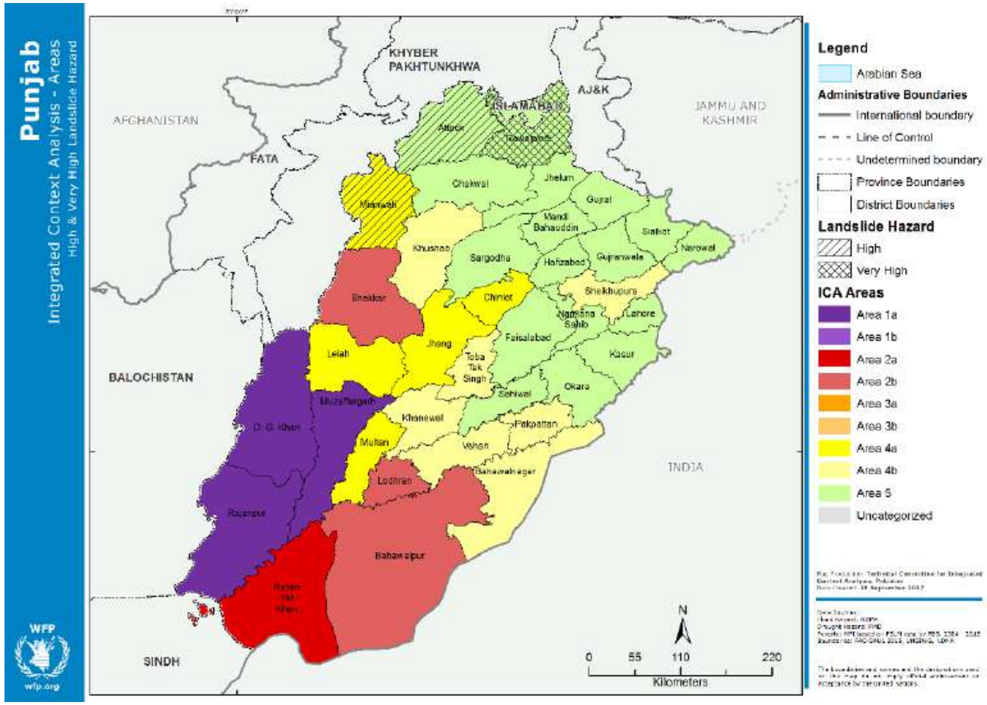
Punjab
Integrated Context Analysis - Areas
High & Very High Landslide Hazard
KHYBER PAKHTUNKHWA
AFGHANISTAN
FATA
AJ&K
ISLAMABAD
JAMMU AND KASHMIR
BALOCHISTAN
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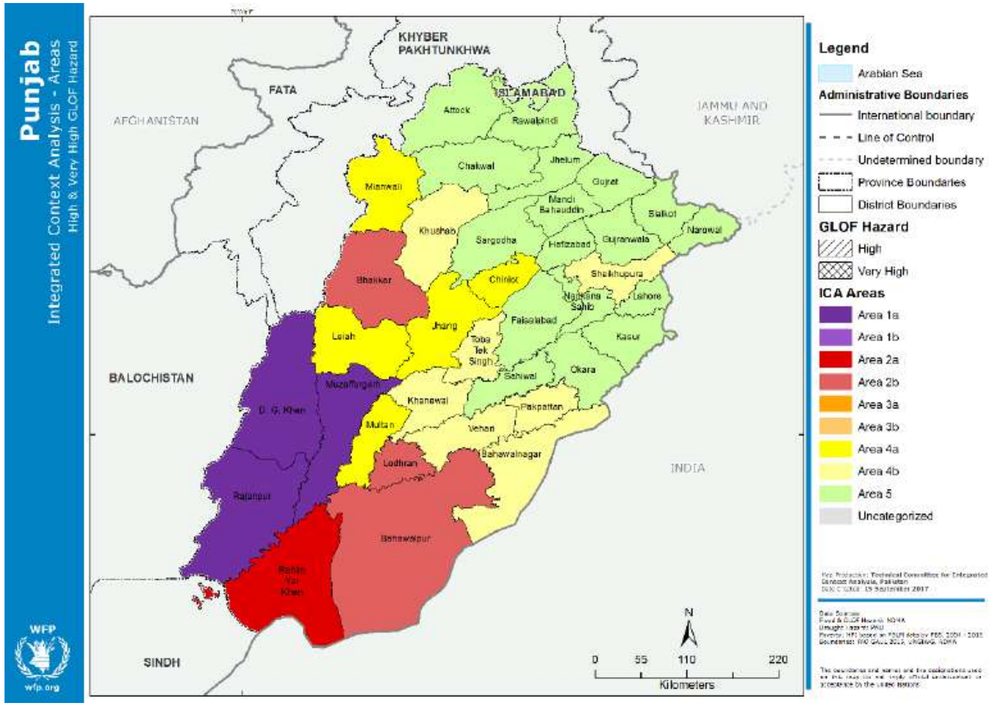
Punjab
Integrated Context Analysis - Areas
High & Very High GLOF Hazard
KHYBER PAKHTUNKHWA
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ISLAMABAD
JAMMU AND KASHMIR
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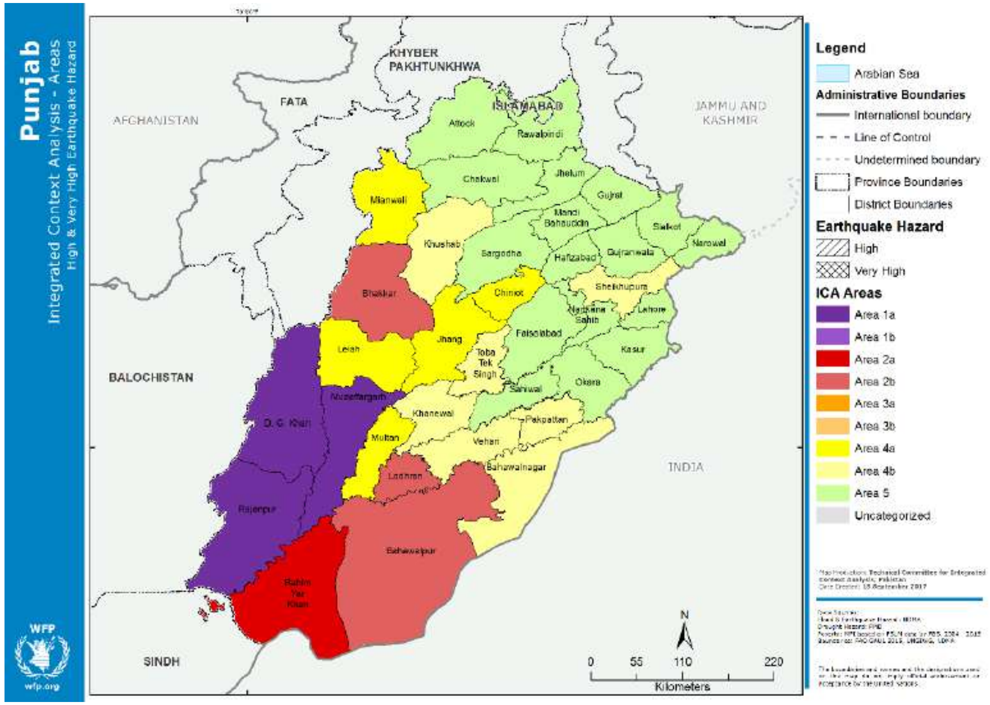
Punjab
Integrated Context Analysis - Areas
High & Very High Earthquake Hazard
KHYBER PAKHTUNKHWA
FATA
AFGHANISTAN
ISLAMABAD
JAMMU AND KASHMIR
BALOCHISTAN
INDIA
SINDH
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0 55 110 220
Kilometers
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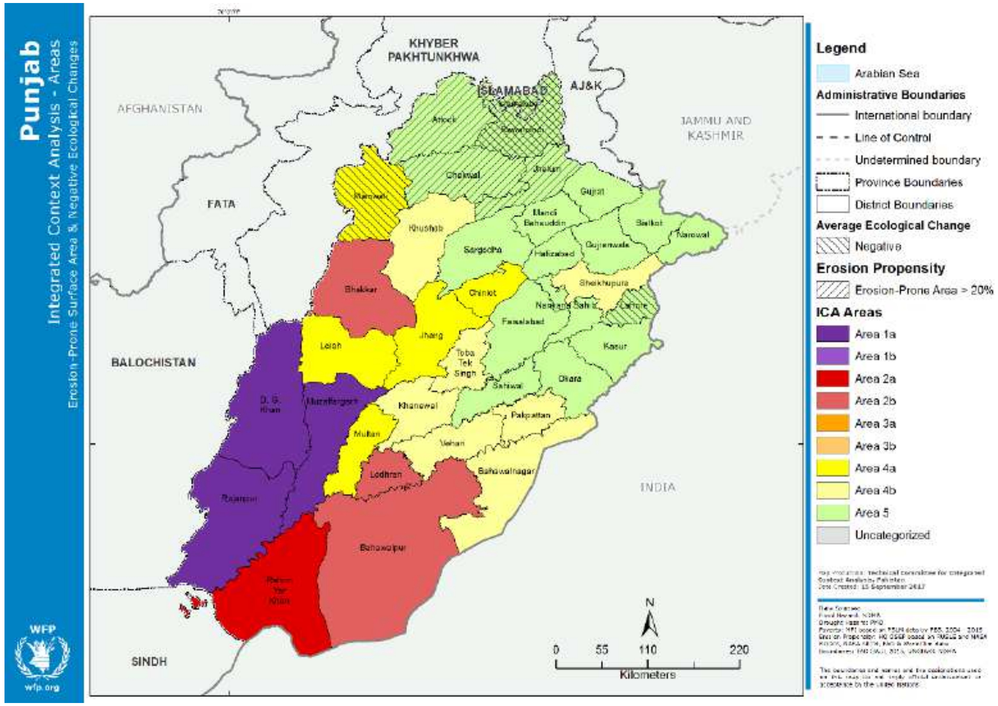
Punjab
Integrated Context Analysis - Areas
Erosion-Prone Surface Area & Negative Ecological Changes
KHYBER PAKHTUNKHWA
AJ&K
FATA
AFGHANISTAN
ISLAMABAD
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Erosion Propensity
Erosion-Prone Area > 20%
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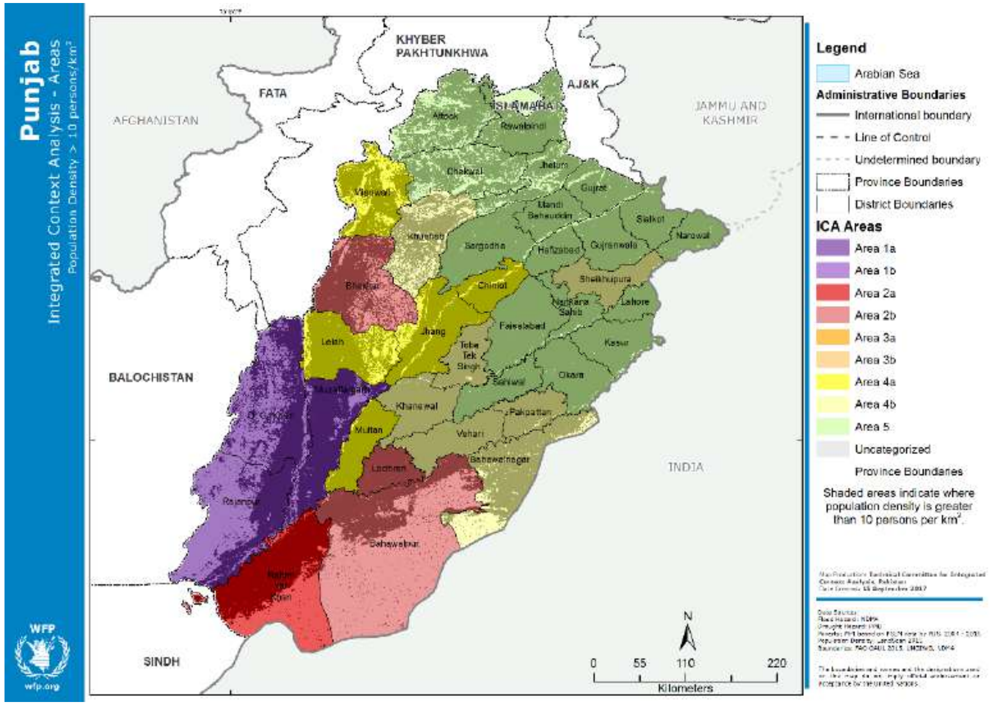
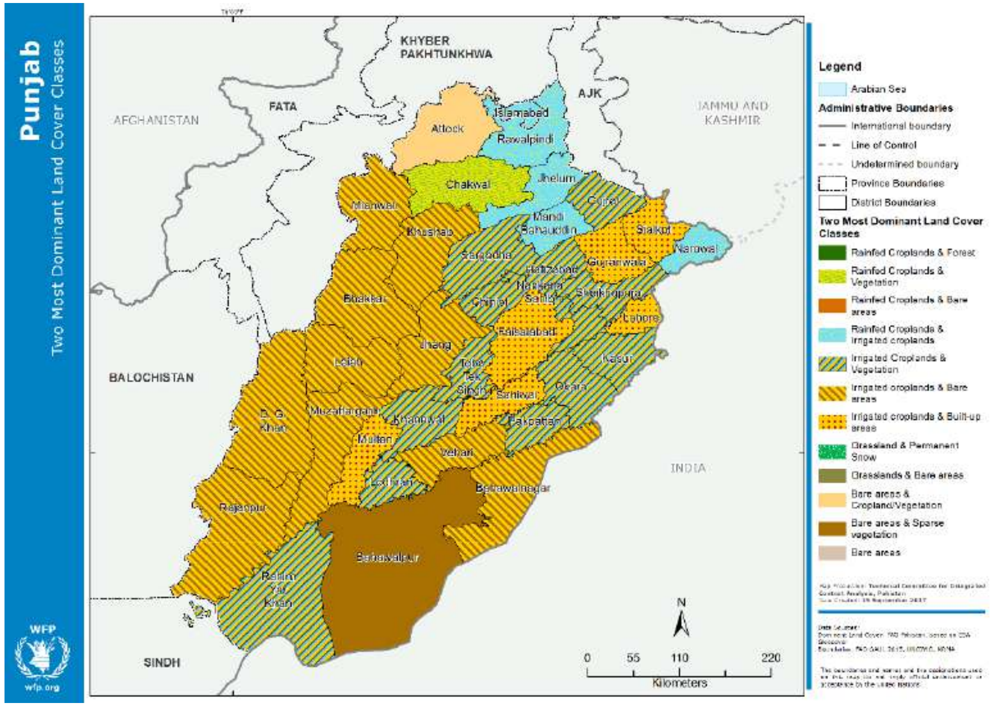
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
0 55 110 220
Kilometers
WFP
wfp.org

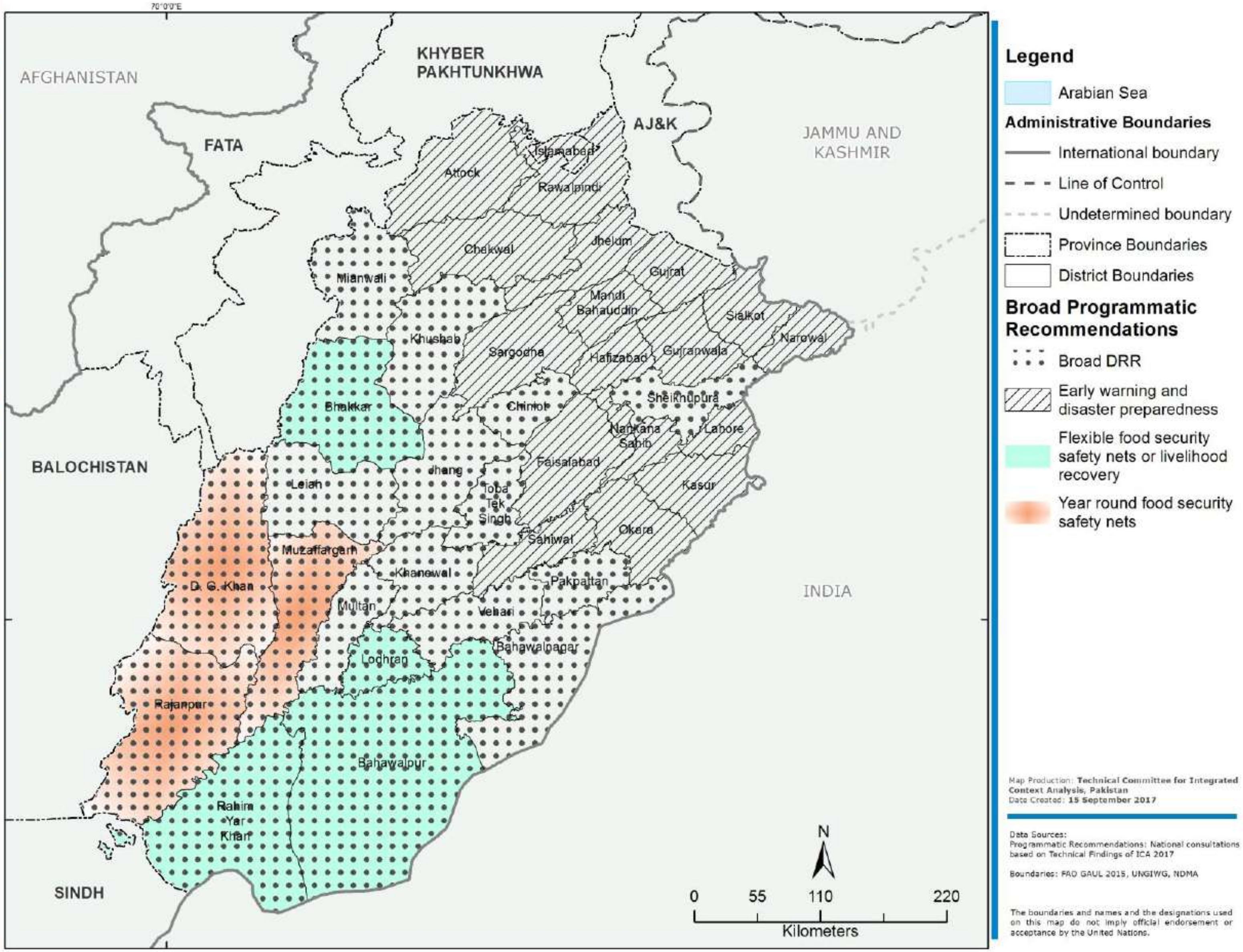

Punjab
Integrated Context Analysis - Areas
Population Density > 10 persons/km²
KHYBER PAKHTUNKHWA
FATA
AJ&K
AFGHANISTAN
JAMMU AND KASHMIR
BALOCHISTAN
SINDH
INDIA
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
Province Boundaries
Shaded areas indicate where population density is greater than 10 persons per km².
0 55 110 220
Kilometers
WFP
wfp.org


Punjab
Two Most Dominant Land Cover Classes
KHYBER PAKHTUNKHWA
FATA
AJK
AFGHANISTAN
JAMMU AND KASHMIR
BALOCHISTAN
SINDH
INDIA
Attock
Islamabad
Rawalpindi
Chakwal
Jhelum
Mianwali
Khushab
Sargodha
Gujrat
Mandi Bahauddin
Sialkot
Narowal
Gujranwala
Hafizabad
Bhakkar
Chiniot
Sheikhupura
Lahore
Faisalabad
Jhang
Layyah
Kasur
Toba Tek Singh
Okara
Sahiwal
Muzaffargarh
Khanewal
Pakpattan
Multan
Vehari
Lodhran
Bahawalnagar
D. G. Khan
Rajanpur
Bahawalpur
Rahim Yar Khan
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Two Most Dominant Land Cover Classes
Rainfed Croplands & Forest
Rainfed Croplands & Vegetation
Rainfed Croplands & Bare areas
Rainfed Croplands & Irrigated croplands
Irrigated Croplands & Vegetation
Irrigated croplands & Bare areas
Irrigated croplands & Built-up areas
Grassland & Permanent Snow
Grasslands & Bare areas
Bare areas & Cropland/Vegetation
Bare areas & Sparse vegetation
Bare areas
0 55 110 220
Kilometers
WFP
wfp.org

Punjab

Integrated Context Analysis

Broad Programmatic Recommendations



WFP

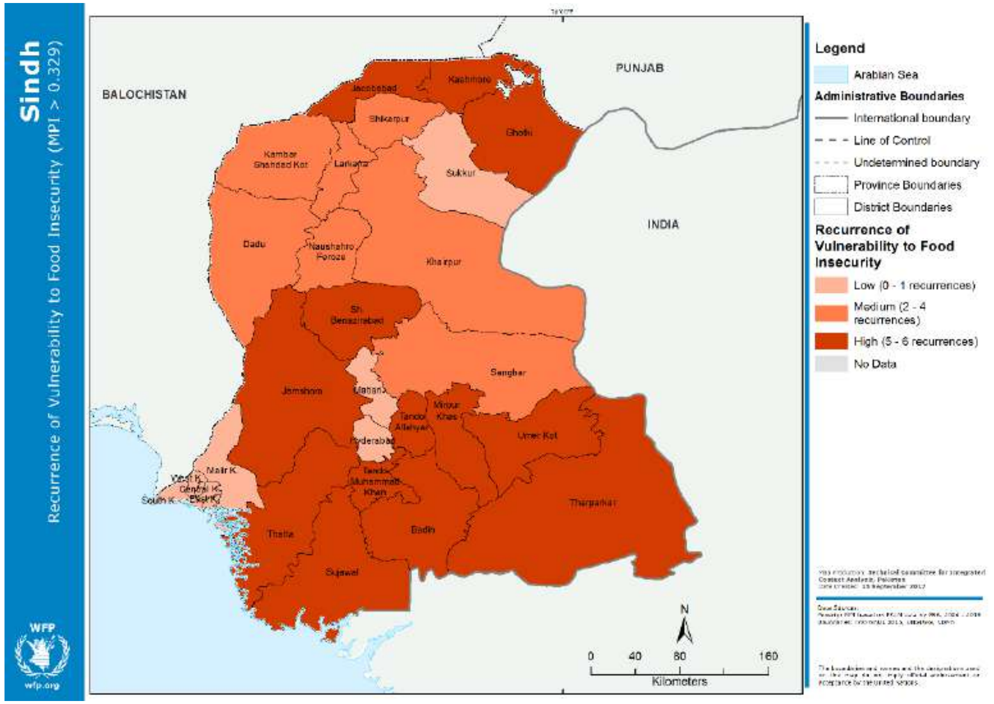
wfp.org

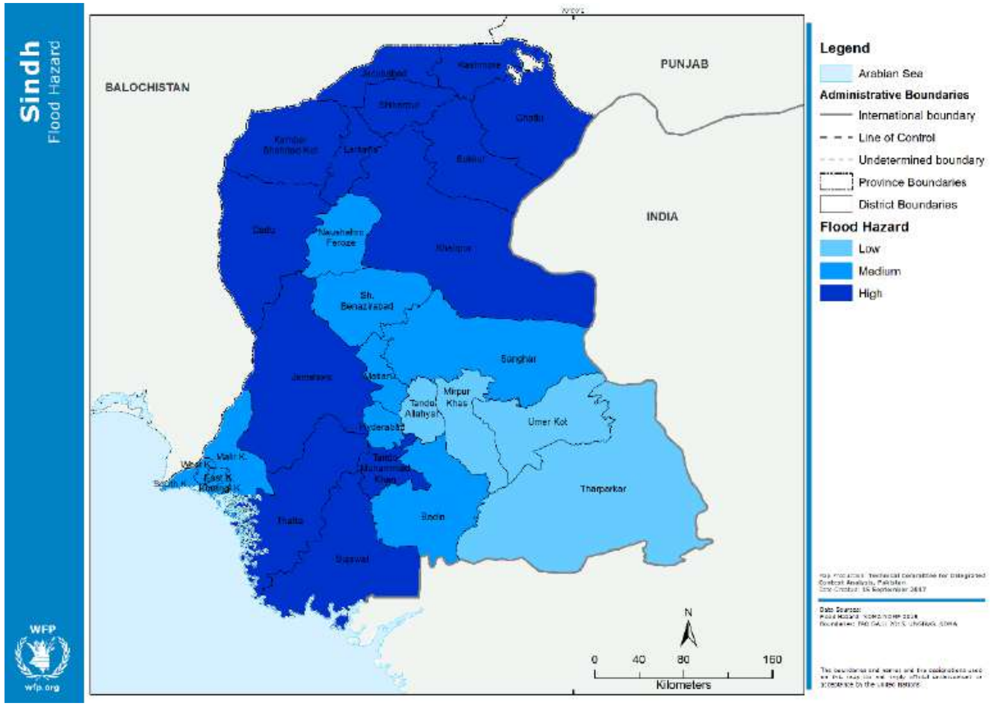
ICA Collecting Table – Sindh

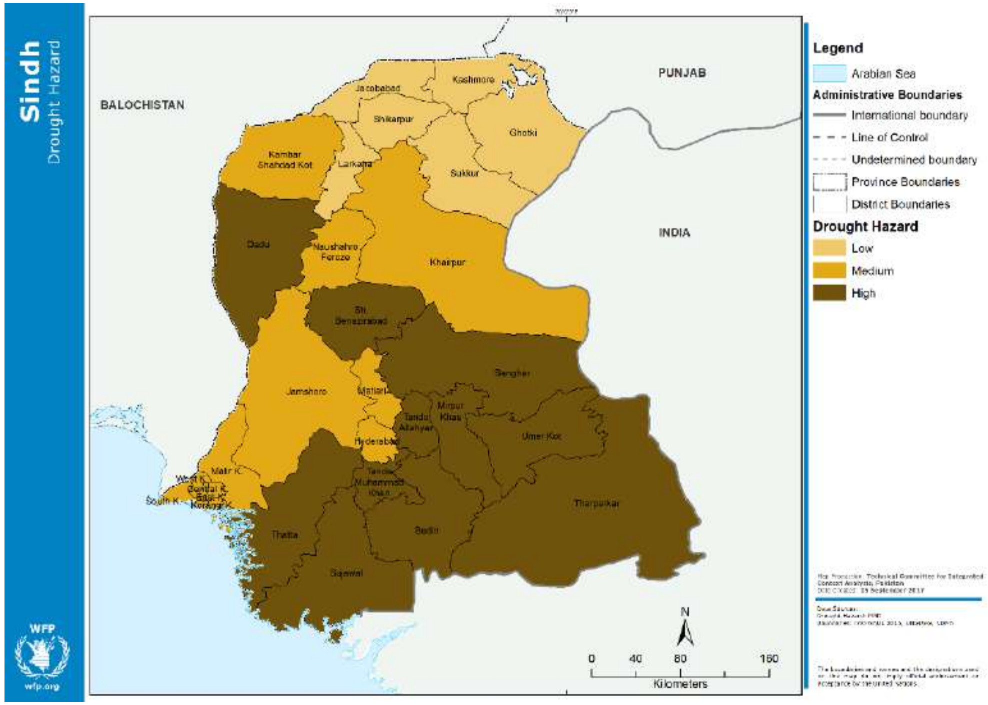
District	Vulnerability to Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Vulnerability to Food Insecurity with Final Natural Hazard Classification		Estimated vulnerable population to food insecurity based on Multi-dimensional Poverty Index (MPI) = Incidence x Intensity, derived from 6 datasets of Pakistan Social and Living Measurement surveys (2004/05, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15)				Total projected population for 2015/16 *(from Provincial Bureaux of Statistics)*	Core Lenses				
	Classification of Recurrence of High Vulnerability to Food Insecurity (MPI > 0.329): *Low = 0-2 recurrences, Medium = 3-4 recurrences, High = 5-6 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification *(Flood & Drought)*	ICA Categories	ICA Areas	Long-term average population vulnerable to food insecurity *(Average of all PSLM rounds)*	Estimated chronically vulnerable population to food insecurity *(Average of 2 lowest PSLM rounds)*	Estimated highest number of vulnerable population to food insecurity *(Average of 2 highest PSLM rounds)*	Estimated potential additional vulnerable population to food insecurity in case of some MPI dimensions significantly deteriorate *(Average of 2 highest PSLM rounds Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4= Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Badin	High	Medium	High	High	Category 1	Area 1a	667436	589348	738298	70862	1698632	1	1	2	1	5
Ghotki	High	High	Low	Medium	Category 1	Area 1b	548912	499179	603557	54645	1729003	1	1	1	1	4
Jacobabad	High	High	Low	Medium	Category 1	Area 1b	389964	343164	440245	50281	1067135	1	1	1	1	4
Jamshoro	High	High	Medium	High	Category 1	Area 1a	307019	288934	325105	18086	932079	1	1	1	2	5
Kashmore	High	High	Low	Medium	Category 1	Area 1b	350870	312473	389268	38397	983353	1	1	1	1	4
Mirpur Khas	High	Low	High	Medium	Category 1	Area 1b	512873	429159	581389	68516	1458285	1	1	1	1	4
Shaheed Benazir Abad	High	Medium	High	High	Category 1	Area 1a	481834	446113	524058	42224	1433508	1	1	1	1	4
Sujawal	High	High	High	High	Category 1	Area 1a	335553	Insufficient Data	Insufficient Data	Insufficient Data	768096	1	1	2	1	5
Tando Allahyar	High	Low	High	Medium	Category 1	Area 1b	224497	214810	234184	9687	693384	1	1	1	1	4
Tando Muhammad Khan	High	High	High	High	Category 1	Area 1a	233007	216785	249228	16221	586006	1	1	1	1	4
Tharparkar	High	Low	High	Medium	Category 1	Area 1b	703359	650091	745386	42026	1592263	1	1	1	1	4
Thatta	High	High	High	High	Category 1	Area 1a	355594	338583	377483	21889	896371	1	1	1	1	4
Umer Kot	High	Low	High	Medium	Category 1	Area 1b	495740	454269	538837	43097	1185408	1	1	1	1	4
Dadu	Medium	High	High	High	Category 2	Area 2a	512430	433106	621543	109113	1772139	1	1	1	2	5
Kambar Shahdad Kot	Medium	High	Medium	High	Category 2	Area 2a	526686	437733	615639	88953	1612495	1	1	2	1	5
Khairpur	Medium	High	Medium	High	Category 2	Area 2a	672712	579619	779061	106350	2502669	1	1	1	1	4
Larkana	Medium	High	Low	Medium	Category 2	Area 2b	441295	316189	578490	137195	1749405	1	1	1	1	4
Naushahro Feroze	Medium	Medium	Medium	Medium	Category 2	Area 2b	394569	333285	453711	59142	1449819	1	1	1	1	4
Sanghar	Medium	Medium	High	High	Category 2	Area 2a	737810	638227	843191	105381	2363666	1	1	1	1	4

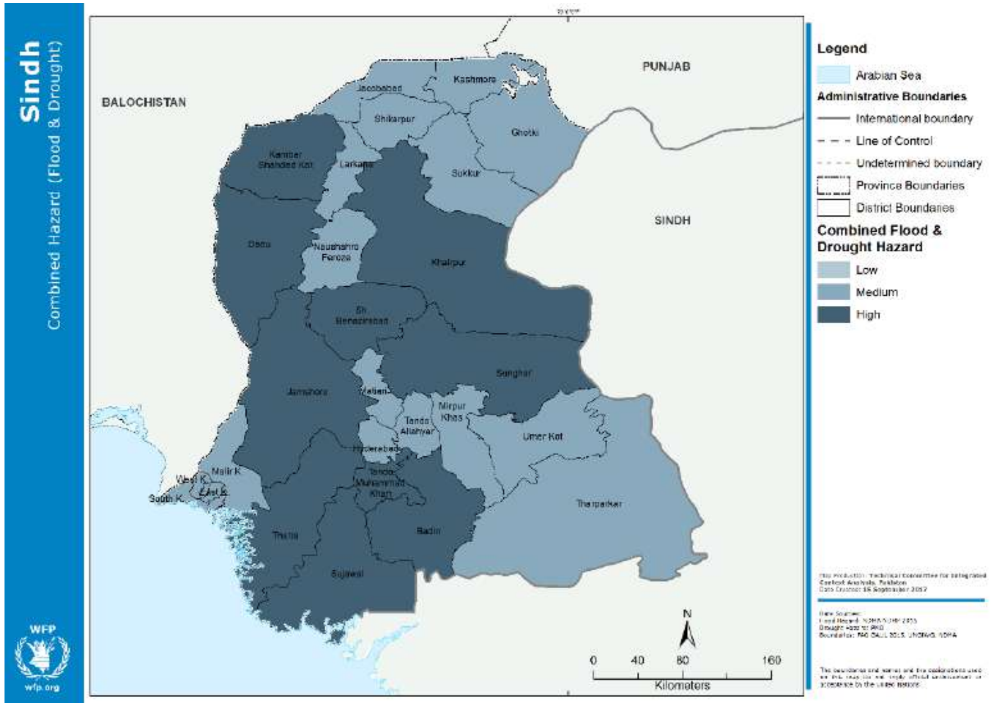
District	Vulnerability to Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Vulnerability to Food Insecurity with Final Natural Hazard Classification		Estimated vulnerable population to food insecurity based on Multi-dimensional Poverty Index (MPI) = Incidence x Intensity, derived from 6 datasets of Pakistan Social and Living Measurement surveys (2004/05, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15)				Total projected population for 2015/16 *(from Provincial Bureaux of Statistics)*	Core Lenses				
	Classification of Recurrence of High Vulnerability to Food Insecurity (MPI > 0.329): *Low = 0-2 recurrences, Medium = 3-4 recurrences, High = 5-6 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification *(Flood & Drought)*	ICA Categories	ICA Areas	Long-term average population vulnerable to food insecurity *(Average of all PSLM rounds)*	Estimated chronically vulnerable population to food insecurity *(Average of 2 lowest PSLM rounds)*	Estimated highest number of vulnerable population to food insecurity *(Average of 2 highest PSLM rounds)*	Estimated potential additional vulnerable population to food insecurity in case of some MPI dimensions significantly deteriorate *(Average of 2 highest PSLM rounds Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4= Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Shikarpur	Medium	High	Low	Medium	Category 2	Area 2b	402118	342773	468589	66471	1330419	1	1	1	1	4
Karachi	Low	Medium	Medium	Medium	Category 4	Area 4b	759291	407562	1112116	352825	19266262	1	1	2	1	5
Hyderabad	Low	Medium	Medium	Medium	Category 4	Area 4b	318577	211147	475044	156467	2142585	1	1	1	1	4
Matiari	Low	Medium	Medium	Medium	Category 4	Area 4b	221560	209648	233471	11911	722382	1	1	1	1	4
Sukkur	Low	High	Low	Medium	Category 4	Area 4b	332439	299545	383426	50988	1514333	1	1	1	1	4

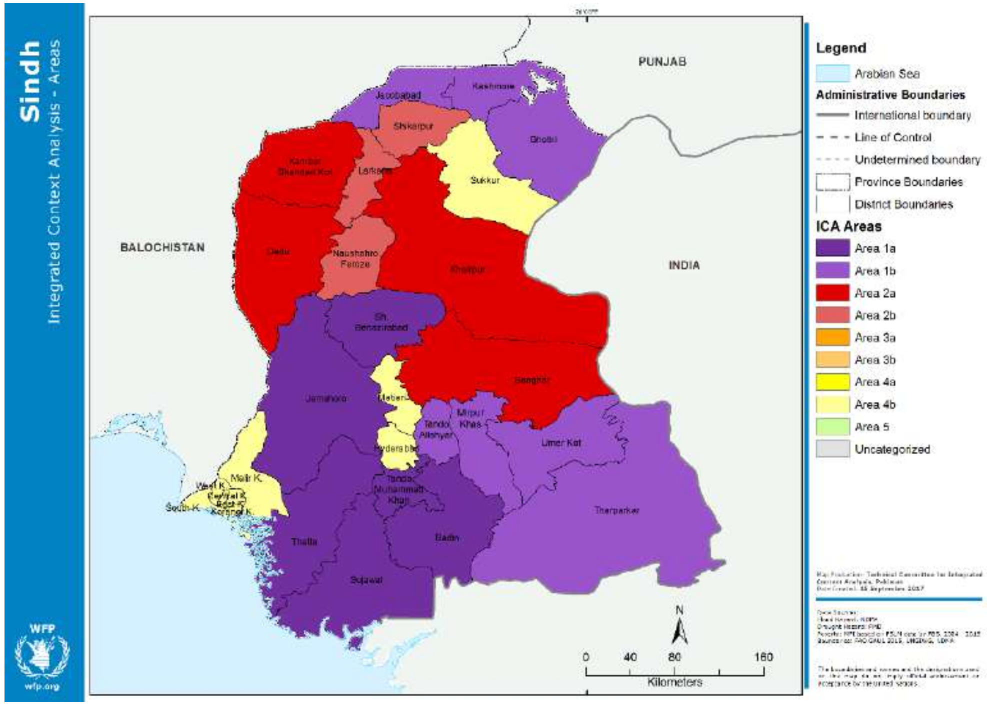
ICA Outcome Maps – Sindh



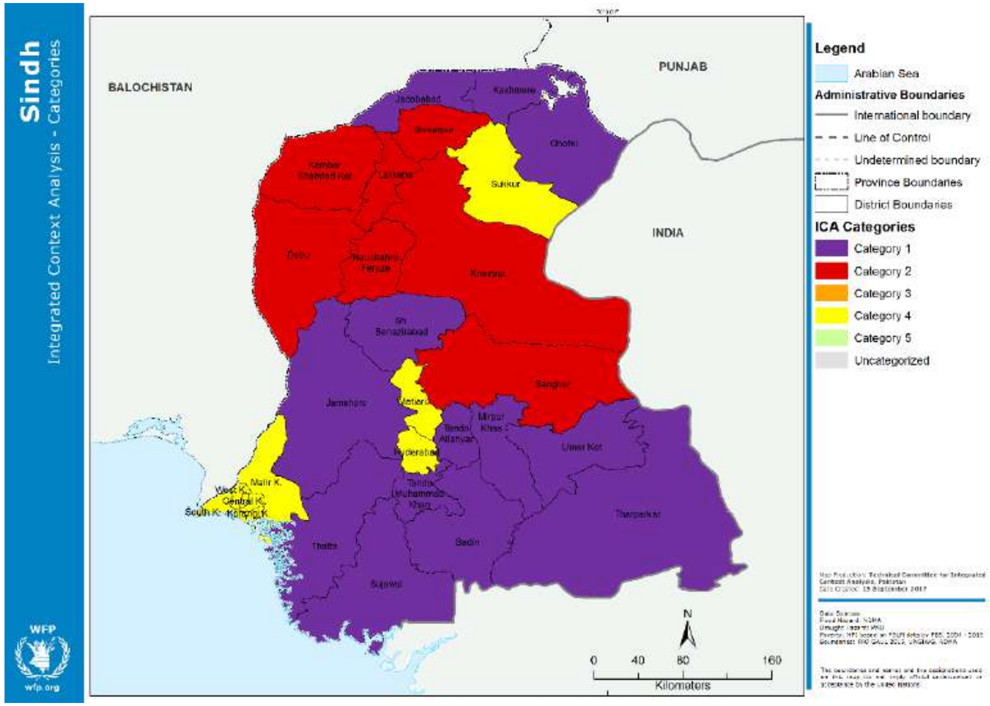



Sindh
Drought Hazard
BALOCHISTAN
PUNJAB
INDIA
Jacobabad
Kashmore
Shikarpur
Ghotki
Kambar Shahdad Kot
Larkana
Sukkur
Dadu
Naushahro Feroze
Khairpur
Sh. Benazirabad
Sanghar
Jamshoro
Matiari
Mirpur Khas
Tando Allahyar
Umer Kot
Hyderabad
Malir K.
West K.
South K.
Tando Muhammad Khan
Tharparkar
Thatta
Badin
Sujawal
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Drought Hazard
Low
Medium
High
0 40 80 160
Kilometers
WFP
wfp.org

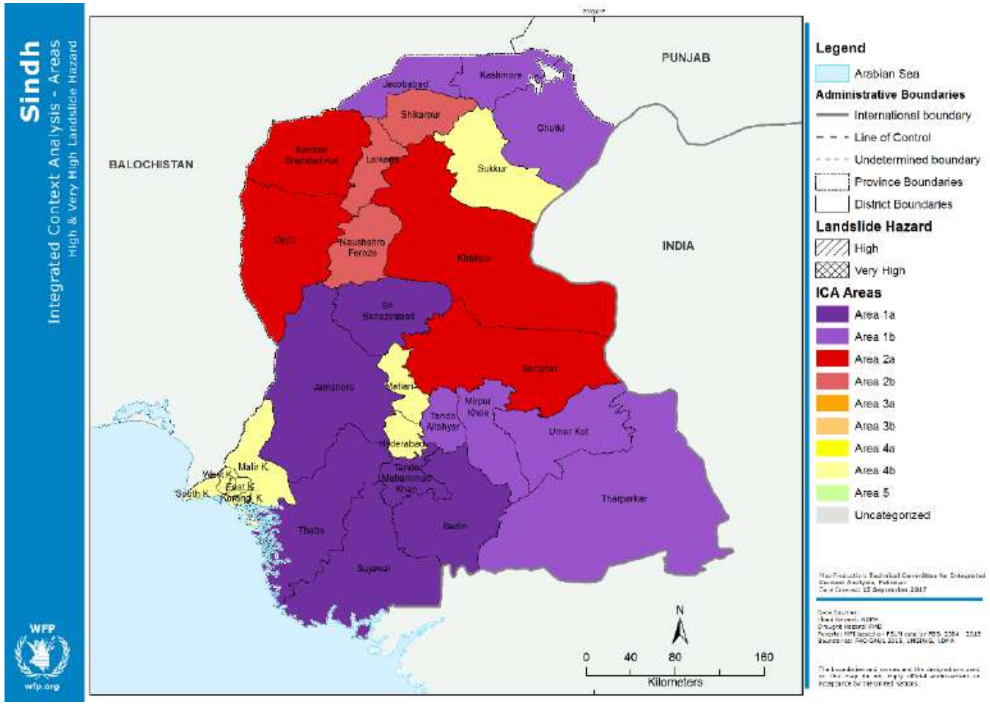

Sindh
Combined Hazard (Flood & Drought)
BALOCHISTAN
PUNJAB
SINDH
Jacobabad
Kashmore
Shikarpur
Ghotki
Kambar Shahdad Kot
Larkana
Sukkur
Dadu
Naushahro Feroze
Khairpur
Sh. Benazirabad
Sanghar
Jamshoro
Matiari
Mirpur Khas
Tando Allahyar
Umer Kot
Hyderabad
Malir K.
West K.
South K.
Tando Muhammad Khan
Tharparkar
Thatta
Badin
Sujawal
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Combined Flood & Drought Hazard
Low
Medium
High
0 40 80 160
Kilometers
WFP
wfp.org

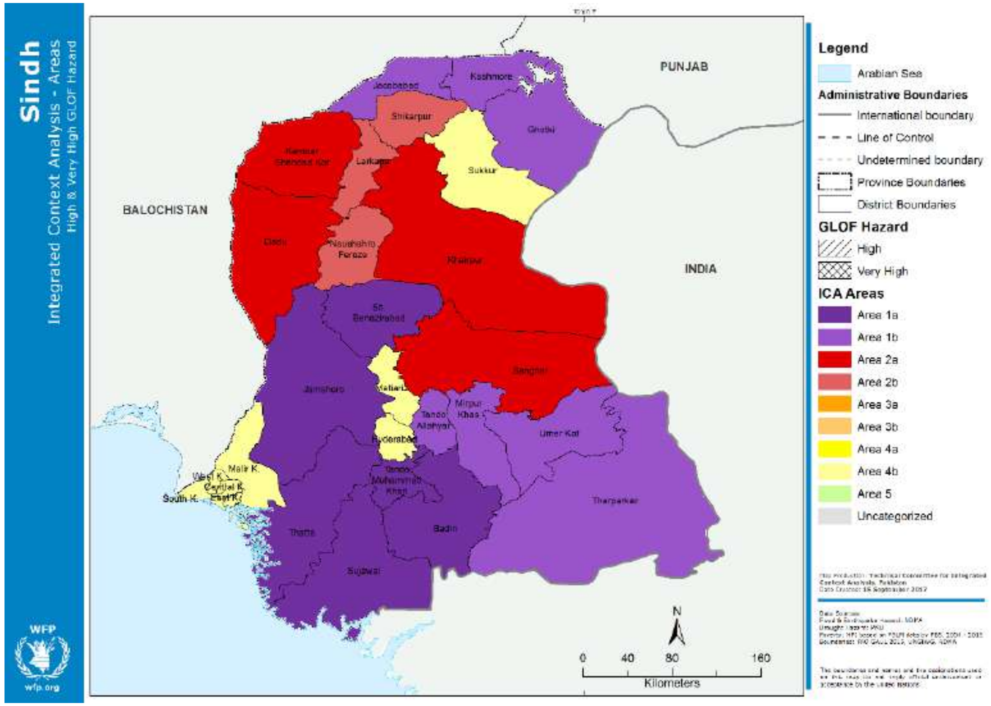


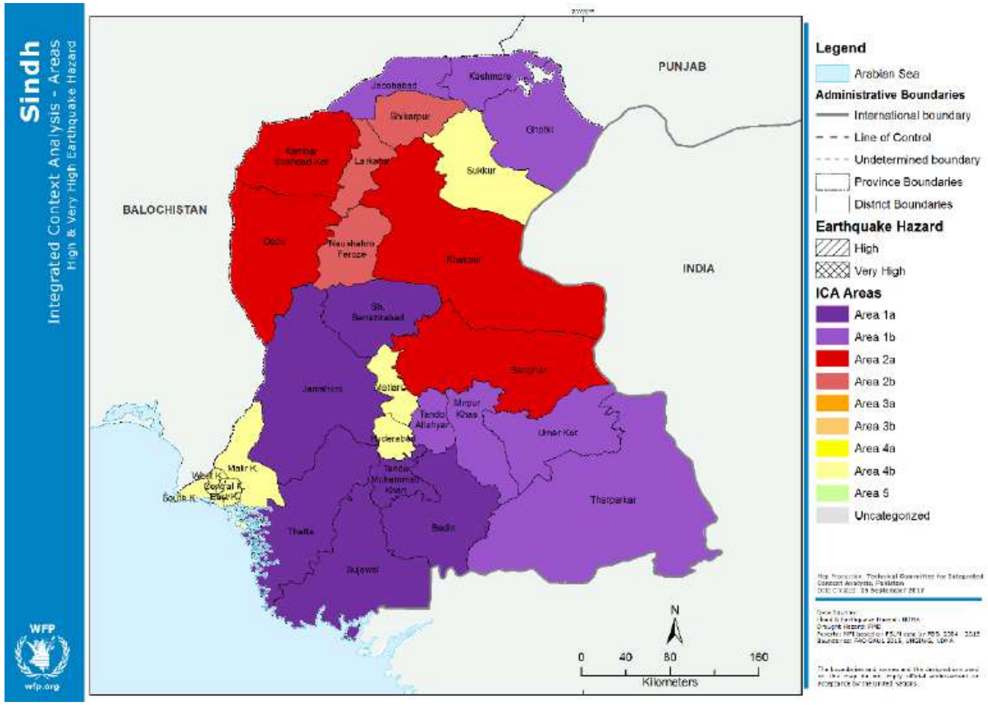
Sindh
Integrated Context Analysis - Areas
PUNJAB
BALOCHISTAN
INDIA
Jacobabad
Kashmore
Shikarpur
Ghotki
Kamber Shahdad Kot
Larkana
Sukkur
Dadu
Naushahro Feroze
Khairpur
Sh. Benazirabad
Sanghar
Jamshoro
Matiari
Tando Allahyar
Mirpur Khas
Umer Kot
Hyderabad
Malir K.
West K.
Central K.
South K.
Korangi K.
Tando Muhammad Khan
Thatta
Badin
Tharparkar
Sujawal
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
0 40 80 160
Kilometers
N
WFP
wfp.org

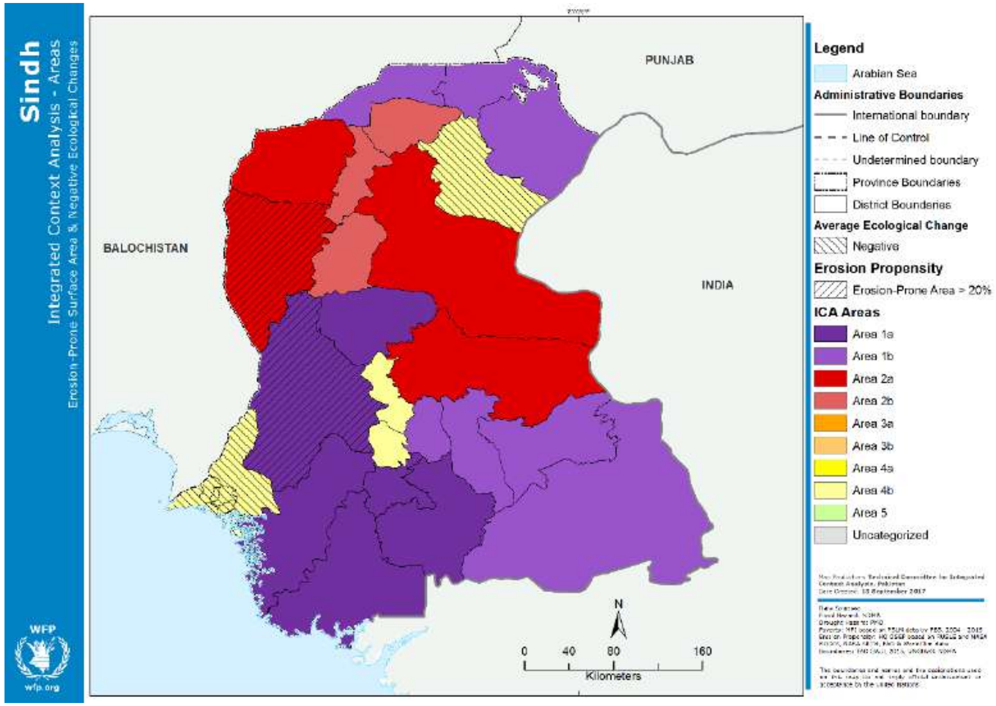


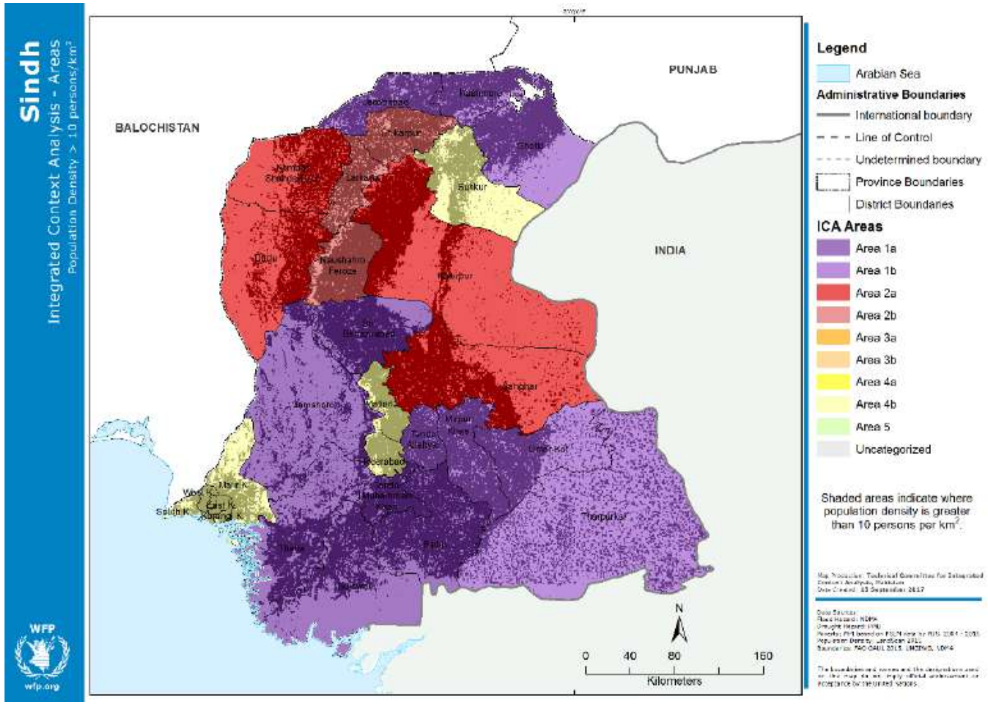
Sindh
Integrated Context Analysis - Categories
PUNJAB
BALOCHISTAN
INDIA
Jacobabad
Kashmore
Shikarpur
Ghotki
Kamber Shahdad Kot
Larkana
Sukkur
Dadu
Naushahro Feroze
Khairpur
Sh. Benazirabad
Sanghar
Jamshoro
Matiari
Tando Allahyar
Mirpur Khas
Umer Kot
Hyderabad
Malir K.
West K.
Central K.
South K.
Korangi K.
Tando Muhammad Khan
Thatta
Badin
Tharparkar
Sujawal
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Categories
Category 1
Category 2
Category 3
Category 4
Category 5
Uncategorized
0 40 80 160
Kilometers
N
WFP
wfp.org

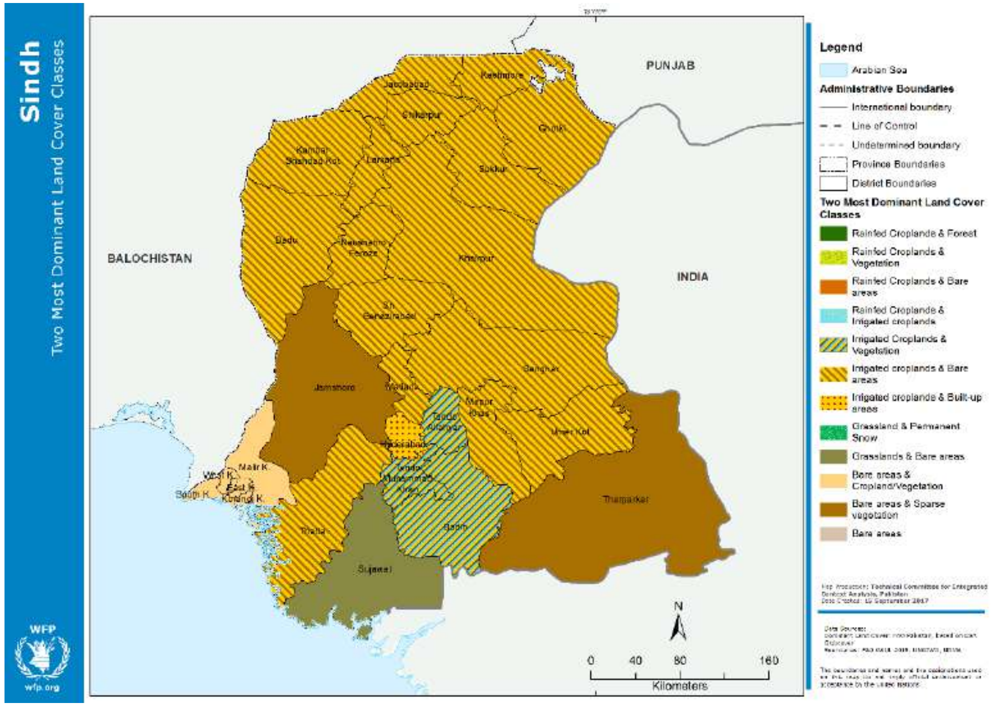

Sindh
Integrated Context Analysis - Areas
High & Very High Landslide Hazard
PUNJAB
BALOCHISTAN
INDIA
Jacobabad
Kashmore
Shikarpur
Ghotki
Sukkur
Larkana
Dadu
Naushahro Feroze
Khairpur
Sh. Benazirabad
Sanghar
Jamshoro
Matiari
Tando Allahyar
Mirpur Khas
Umer Kot
Tharparkar
Tando Muhammad Khan
Badin
Thatta
Sujawal
Malir K.
West K.
East K.
South K.
Korangi K.
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Landslide Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
N
0 40 80 160
Kilometers
WFP
wfp.org


Sindh
Integrated Context Analysis - Areas
High & Very High GLOF Hazard
PUNJAB
BALOCHISTAN
INDIA
Jacobabad
Kashmore
Shikarpur
Ghotki
Sukkur
Larkana
Dadu
Naushahro Feroze
Khairpur
Sh. Benazirabad
Sanghar
Jamshoro
Matiari
Tando Allahyar
Mirpur Khas
Hyderabad
Umer Kot
Tharparkar
Tando Muhammad Khan
Badin
Thatta
Sujawal
Malir K.
West K.
Central K.
East K.
South K.
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
GLOF Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
N
0 40 80 160
Kilometers
WFP
wfp.org


Sindh
Integrated Context Analysis - Areas
High & Very High Earthquake Hazard
PUNJAB
BALOCHISTAN
INDIA
Jacobabad
Kashmore
Shikarpur
Ghotki
Sukkur
Larkana
Naushahro Feroze
Khairpur
Dadu
Sh. Benazirabad
Sanghar
Jamshoro
Matiari
Hyderabad
Tando Allahyar
Mirpur Khas
Umer Kot
Tharparkar
Thatta
Sujawal
Badin
Tharparkar
N
0 40 80 160
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Earthquake Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
WFP
wfp.org


Sindh
Integrated Context Analysis - Areas
Erosion-Prone Surface Area & Negative Ecological Changes
PUNJAB
BALOCHISTAN
INDIA
N
0 40 80 160
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Average Ecological Change
Negative
Erosion Propensity
Erosion-Prone Area > 20%
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
WFP
wfp.org

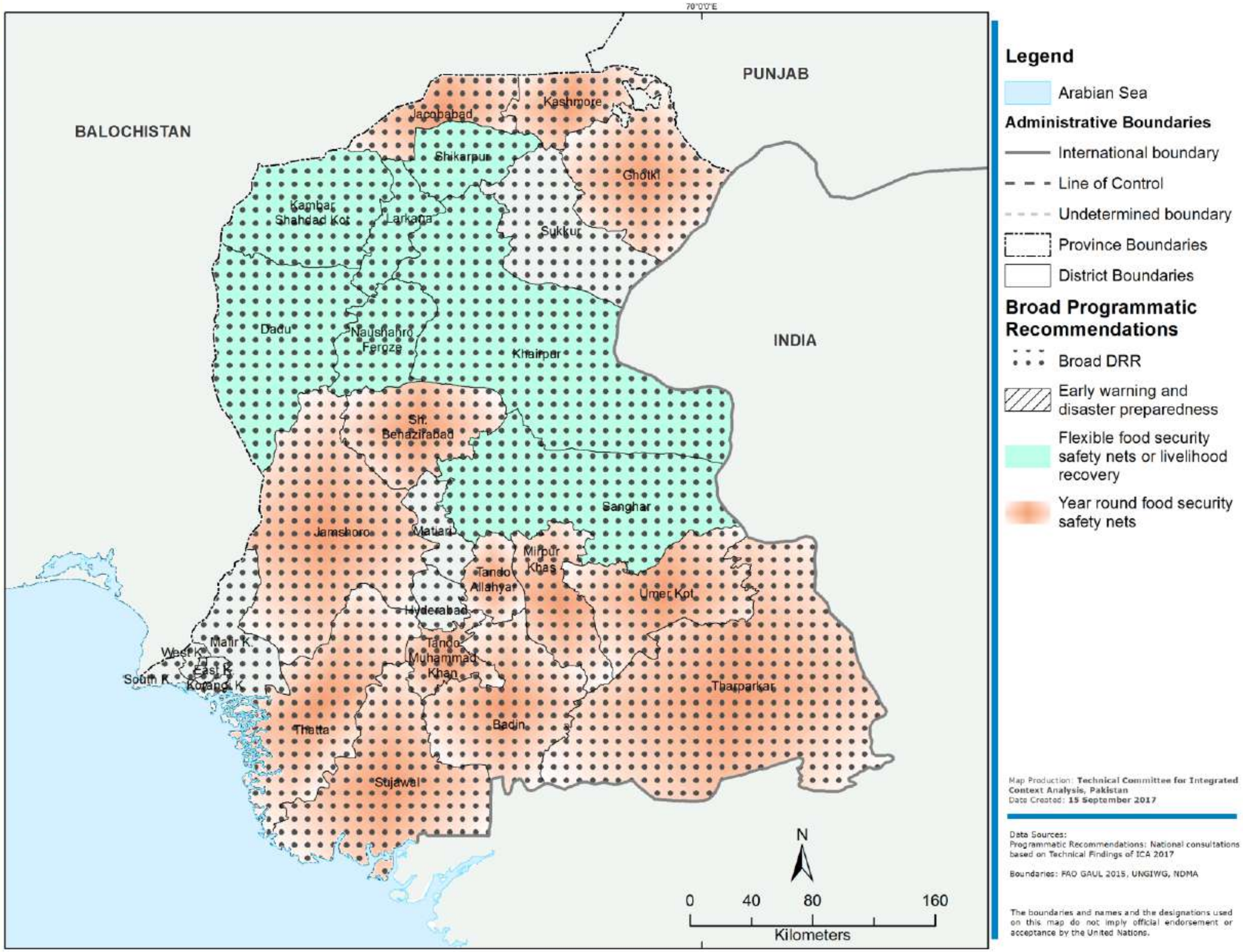

Sindh
Integrated Context Analysis - Areas
Population Density > 10 persons/km²
BALOCHISTAN
PUNJAB
INDIA
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
Shaded areas indicate where population density is greater than 10 persons per km².
0 40 80 160
Kilometers
WFP
wfp.org


Sindh
Two Most Dominant Land Cover Classes
BALOCHISTAN
PUNJAB
INDIA
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Two Most Dominant Land Cover Classes
Rainfed Croplands & Forest
Rainfed Croplands & Vegetation
Rainfed Croplands & Bare areas
Rainfed Croplands & Irrigated croplands
Irrigated Croplands & Vegetation
Irrigated croplands & Bare areas
Irrigated croplands & Built-up areas
Grassland & Permanent Snow
Grasslands & Bare areas
Bare areas & Cropland/Vegetation
Bare areas & Sparse vegetation
Bare areas
0 40 80 160
Kilometers
WFP
wfp.org

Sindh

Integrated Context Analysis

Broad Programmatic Recommendations



WFP

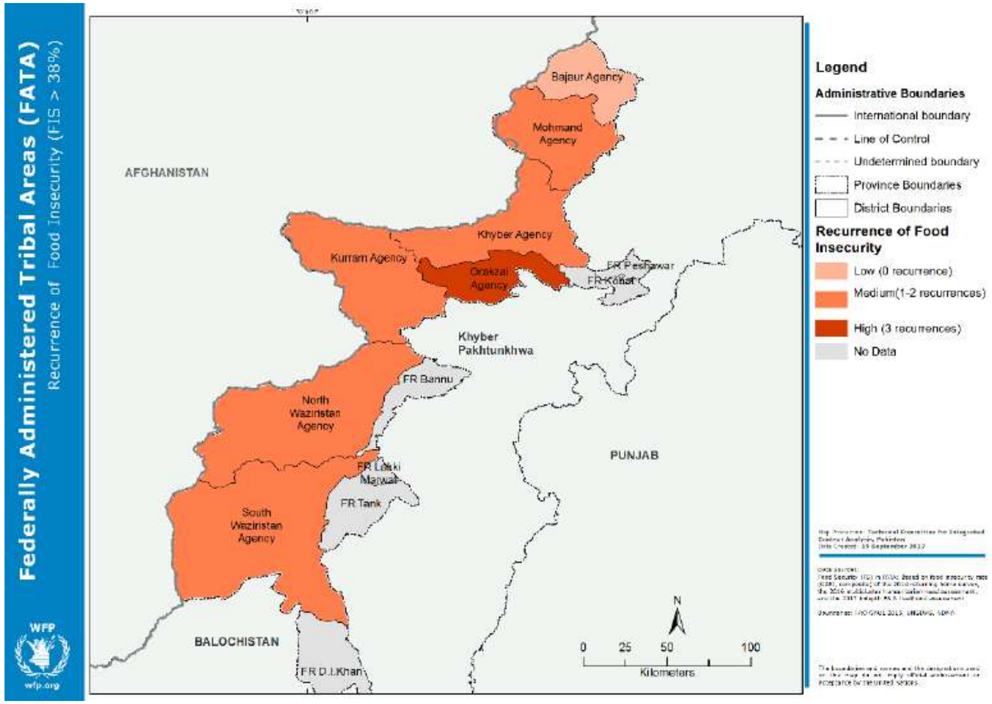
wfp.org

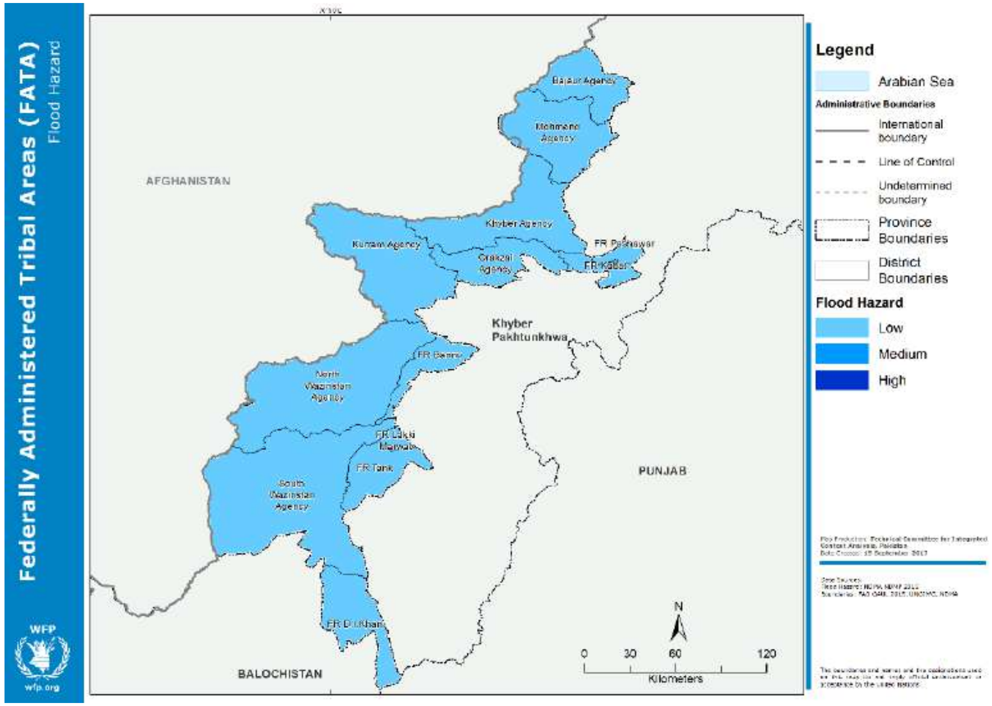
ICA Collecting Table – FATA

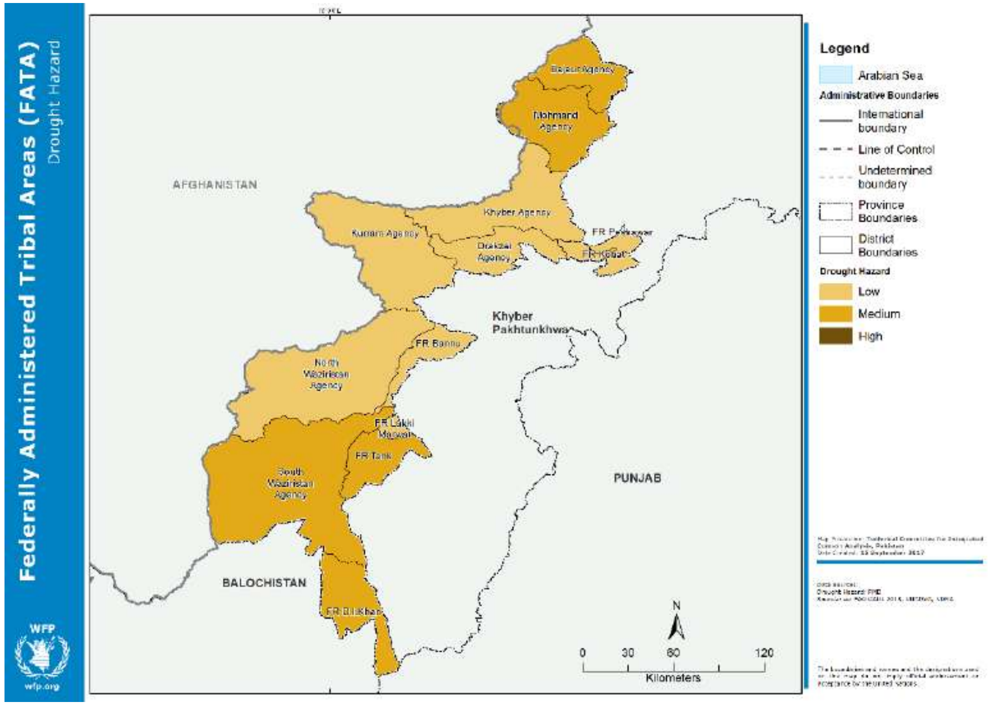
District	Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Food Insecurity with Final Natural Hazard Classification		Estimated food insecure population based on composite food insecurity rate of three food security assessments conducted in 2014, 2016 and 2017 by applying Consolidated Approach to Reporting on Indicators of food security - CARI (WFP 2014)	Estimated Food Insecure Population			Total projected populatio n for 2017 *(from FATA Bureau of Statistics)*	Core Lenses				
	Classification of Recurrence of High Food Insecurity (Moderately + Severely Insecure > 38%): *Low = 0 recurrences, Medium = 1-2 recurrences, High = 3 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification *(Flood & Drought)*	ICA Categories	ICA Areas		Estimated mostly food insecure population *(Average of 2 lowest assessments*)*	Estimated highest number of food insecure population *(Average of 2 highest assessments*)*	Estimated additional food insecure population in case of a major shock *(Average of 2 highest assessments Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Low; 2 = Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Low; 2 = Medium; 3 = High; 4 = Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Khyber Agency	Medium	Low	Low	Low	Category 3	Area 3b	433278	313401	636571	203294	822070	3	1	2	3	9
Kurram Agency	Medium	Low	Low	Low	Category 3	Area 3b	279408	224519	366485	87076	674084	3	1	2	3	9
Mohmand Agency	Medium	Low	Medium	Low	Category 3	Area 3b	182303	165127	199479	17176	502887	3	1	3	3	10
North Waziristan Agency	Medium	Low	Low	Low	Category 3	Area 3b	204595	179247	229944	25349	543174	3	1	2	2	8
Orakzai Agency	High	Low	Low	Low	Category 3	Area 3a	159816	148201	170618	10802	338976	3	1	2	4	10
South Waziristan Agency	Medium	Low	Medium	Low	Category 3	Area 3b	152652	90021	214975	62323	646314	2	1	2	2	7
Bajaur Agency	Low	Low	Medium	Low	Category 5	Area 5	125075	107301	142848	17773	894990	2	1	3	4	10
FR Bannu	No Data	Low	Low	Low	Uncategorized	Uncategorized						2	1	2	2	7
FR D.I.Khan	No Data	Low	Medium	Low	Uncategorized	Uncategorized						1	1	3	3	8
FR Kohat	No Data	Low	Low	Low	Uncategorized	Uncategorized						2	1	2	4	9
FR Lakki Marwat	No Data	Low	Low	Low	Uncategorized	Uncategorized						2	1	2	2	7
FR Peshawar	No Data	Low	Low	Low	Uncategorized	Uncategorized						2	1	2	4	9
FR Tank	No Data	Low	Medium	Low	Uncategorized	Uncategorized						2	1	2	2	7

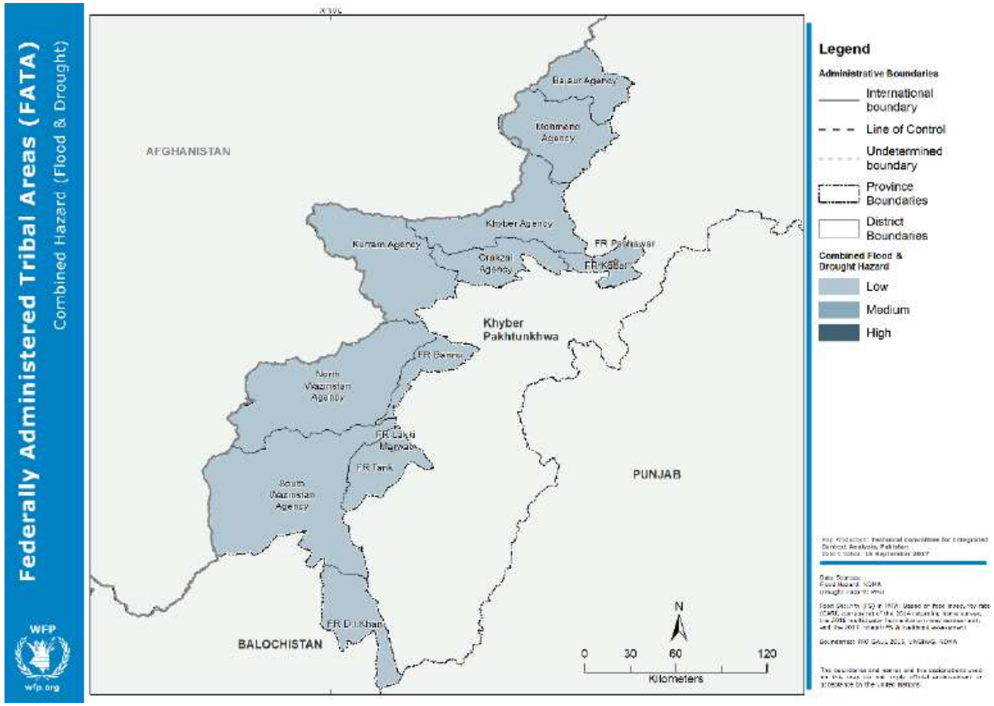
* Figures in red are based on the value of the lowest/highest round, given that only 2 rounds were available.

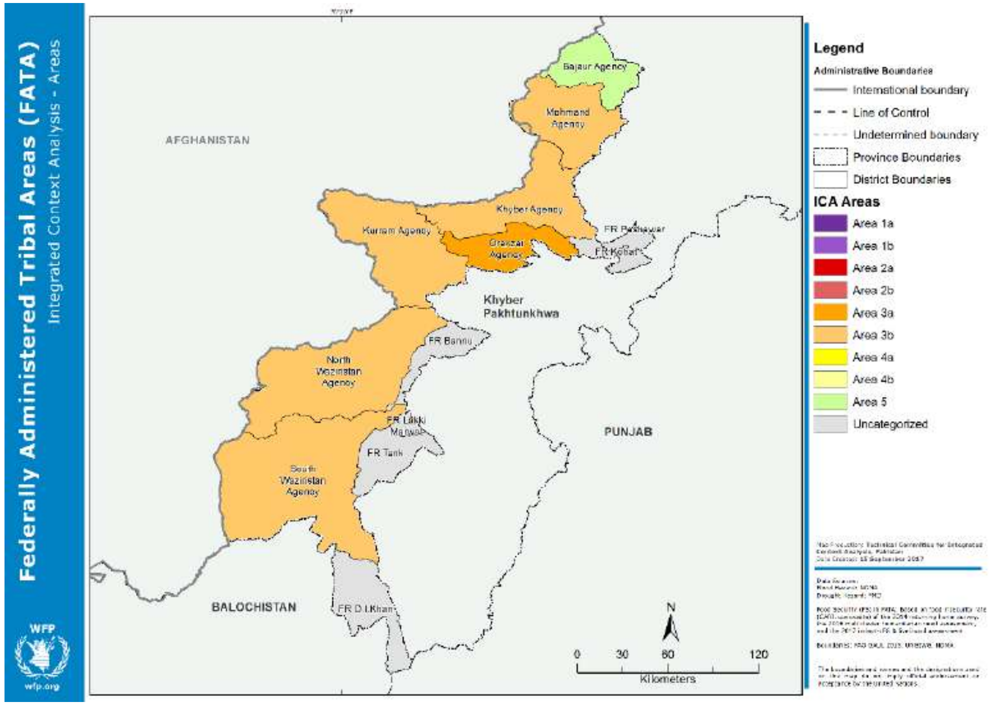
ICA Outcome Maps – FATA

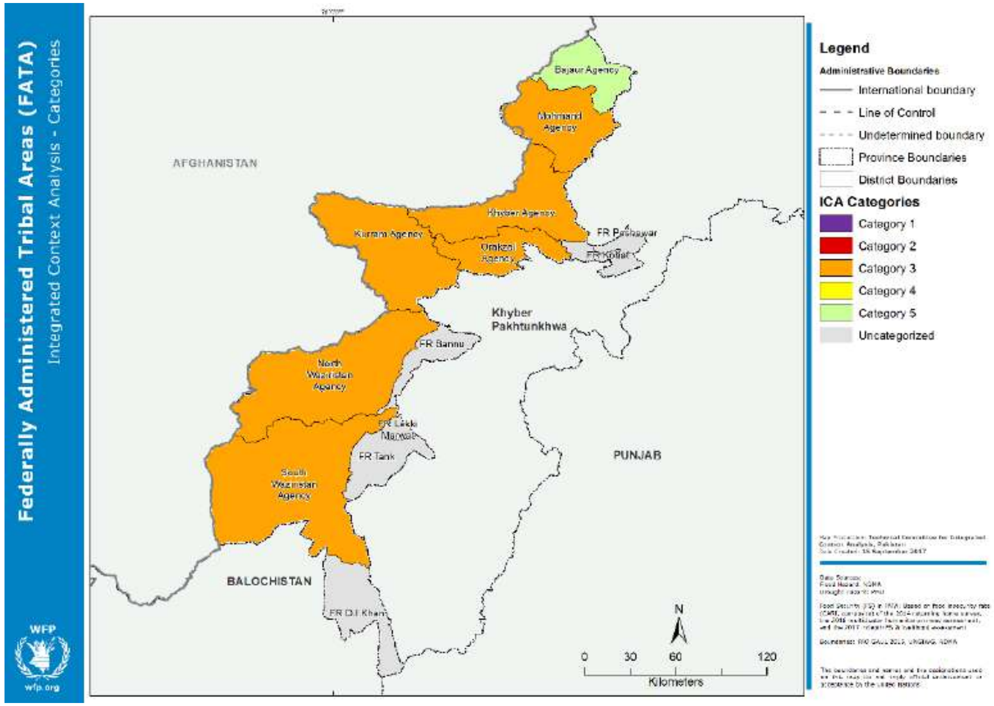


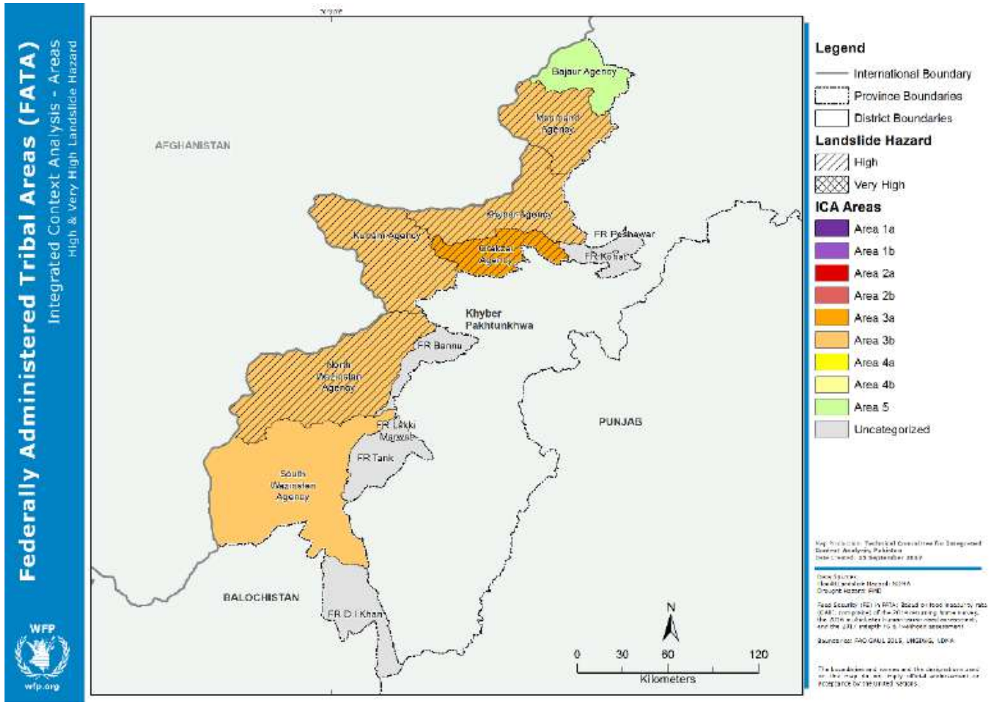


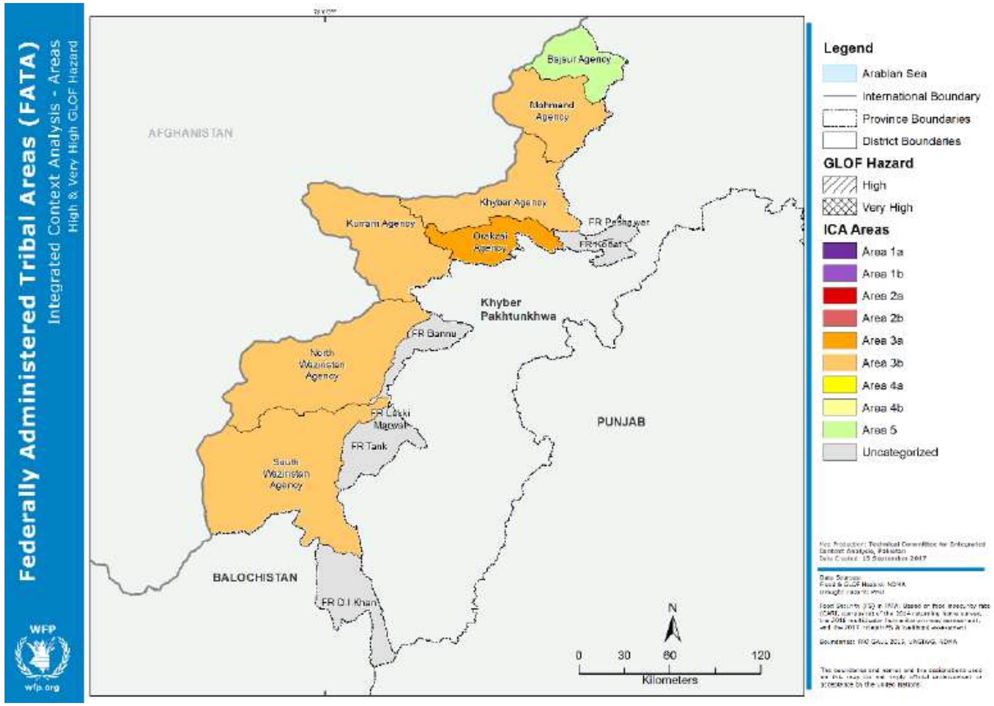

Federally Administered Tribal Areas (FATA)
Drought Hazard
Bajaur Agency
Mohmand Agency
AFGHANISTAN
Khyber Agency
Kurram Agency
Orakzai Agency
FR Peshawar
FR Kohat
Khyber Pakhtunkhwa
FR Bannu
North Waziristan Agency
FR Lakki Marwat
FR Tank
South Waziristan Agency
PUNJAB
BALOCHISTAN
FR D.I.Khan
N
0 30 60 120
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Drought Hazard
Low
Medium
High
WFP
wfp.org

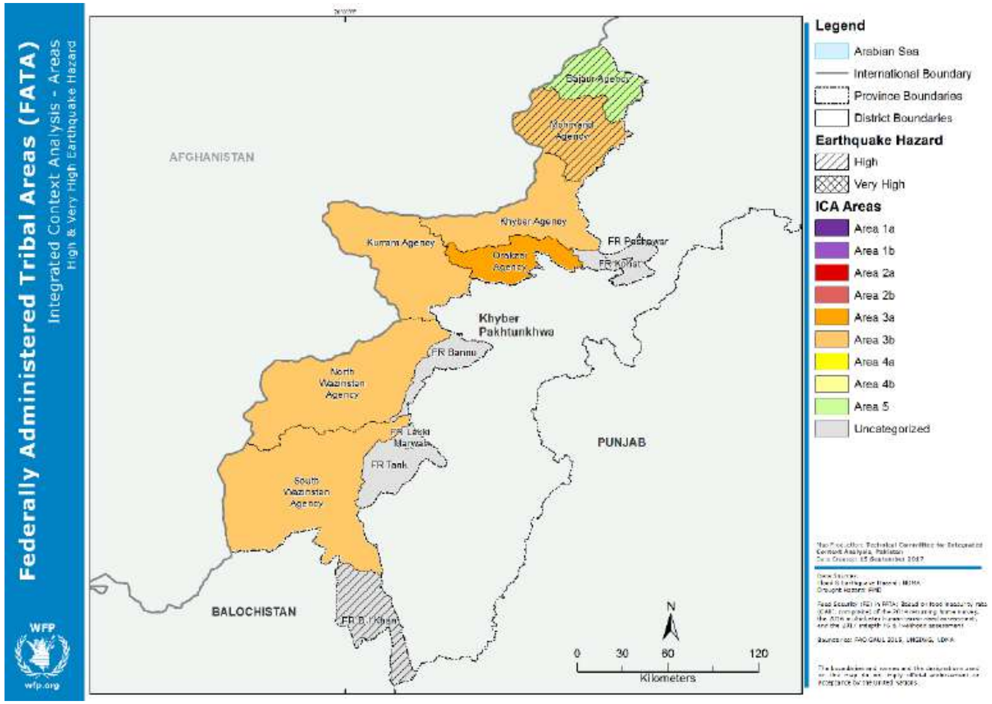

Federally Administered Tribal Areas (FATA)
Combined Hazard (Flood & Drought)
Bajaur Agency
Mohmand Agency
AFGHANISTAN
Khyber Agency
Kurram Agency
Orakzai Agency
FR Peshawar
FR Kohat
Khyber Pakhtunkhwa
FR Bannu
North Waziristan Agency
FR Lakki Marwat
FR Tank
South Waziristan Agency
PUNJAB
BALOCHISTAN
FR D.I.Khan
N
0 30 60 120
Kilometers
Legend
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Combined Flood & Drought Hazard
Low
Medium
High
WFP
wfp.org

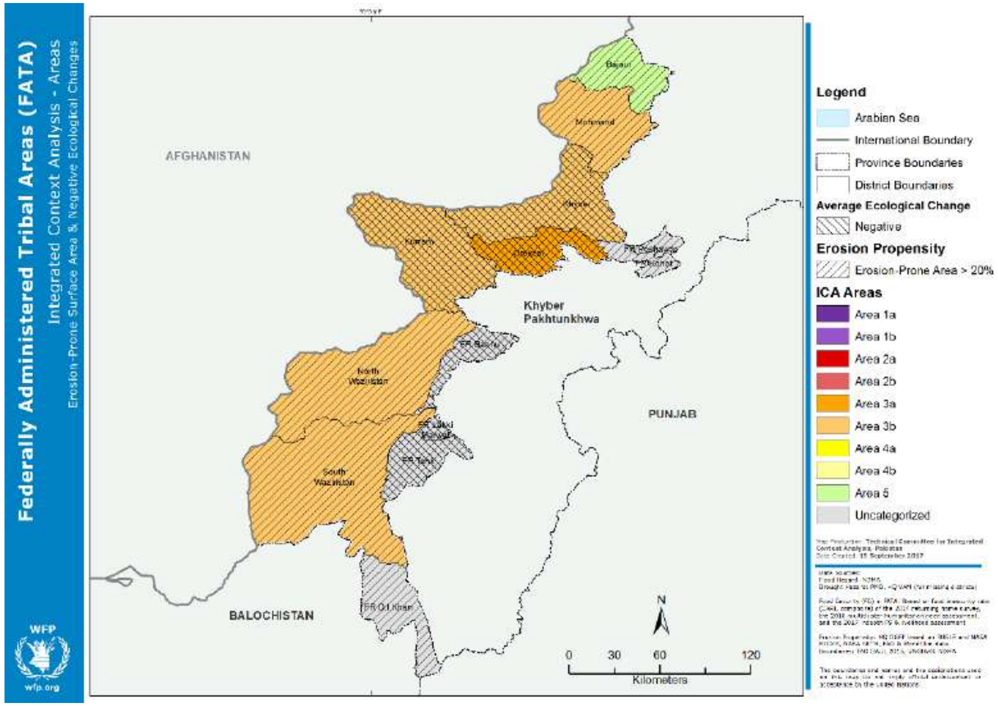

Federally Administered Tribal Areas (FATA)
Integrated Context Analysis - Areas
Bajaur Agency
Mohmand Agency
AFGHANISTAN
Khyber Agency
Kurram Agency
Orakzai Agency
FR Peshawar
FR Kohat
Khyber Pakhtunkhwa
FR Bannu
North Waziristan Agency
FR Lakki Marwat
FR Tank
South Waziristan Agency
PUNJAB
BALOCHISTAN
FR D.I.Khan
N
0 30 60 120
Kilometers
Legend
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
WFP
wfp.org

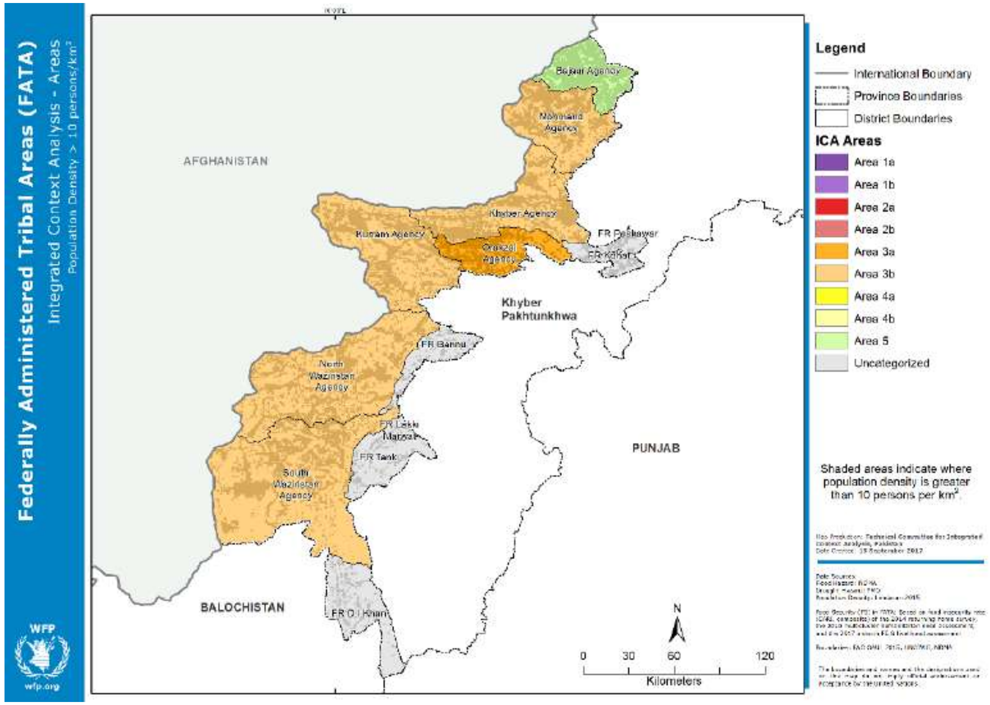

Federally Administered Tribal Areas (FATA)
Integrated Context Analysis - Categories
Bajaur Agency
Mohmand Agency
AFGHANISTAN
Khyber Agency
Kurram Agency
Orakzai Agency
FR Peshawar
FR Kohat
Khyber Pakhtunkhwa
FR Bannu
North Waziristan Agency
FR Lakki Marwat
FR Tank
South Waziristan Agency
PUNJAB
BALOCHISTAN
FR D.I.Khan
N
0 30 60 120
Kilometers
Legend
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
ICA Categories
Category 1
Category 2
Category 3
Category 4
Category 5
Uncategorized
WFP
wfp.org

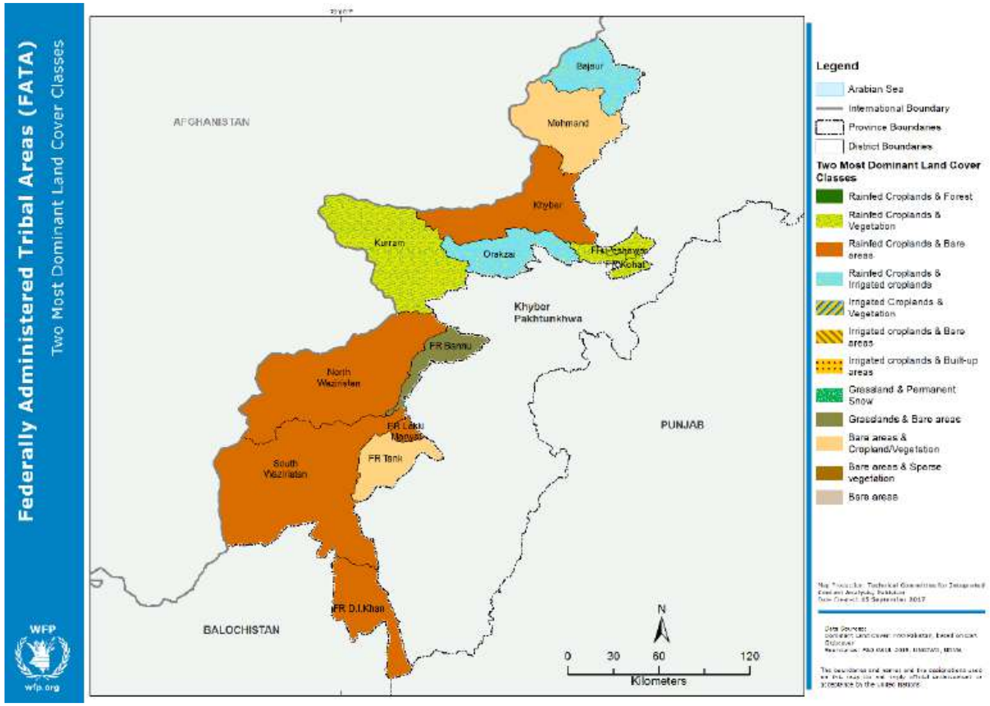

Federally Administered Tribal Areas (FATA)
Integrated Context Analysis - Areas
High & Very High Landslide Hazard
AFGHANISTAN
Bajaur Agency
Kurram Agency
Khyber Agency
Orakzai Agency
FR Peshawar
FR Kohat
Khyber Pakhtunkhwa
FR Bannu
North Waziristan Agency
FR Lakki Marwat
FR Tank
South Waziristan Agency
PUNJAB
BALOCHISTAN
FR D.I.Khan
Legend
International Boundary
Province Boundaries
District Boundaries
Landslide Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
N
0 30 60 120
Kilometers
WFP
wfp.org


Federally Administered Tribal Areas (FATA)
Integrated Context Analysis - Areas
High & Very High GLOF Hazard
AFGHANISTAN
Bajaur Agency
Mohmand Agency
Khyber Agency
Kurram Agency
Orakzai Agency
FR Peshawar
FR Kohat
Khyber Pakhtunkhwa
FR Bannu
North Waziristan Agency
FR Lakki Marwat
FR Tank
South Waziristan Agency
PUNJAB
BALOCHISTAN
FR D.I.Khan
Legend
Arabian Sea
International Boundary
Province Boundaries
District Boundaries
GLOF Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
N
0 30 60 120
Kilometers
WFP
wfp.org


Federally Administered Tribal Areas (FATA)
Integrated Context Analysis - Areas
High & Very High Earthquake Hazard
AFGHANISTAN
Bajaur Agency
Mohmand Agency
Khyber Agency
Kurram Agency
Orakzai Agency
FR Peshawar
FR Kohat
Khyber Pakhtunkhwa
FR Bannu
North Waziristan Agency
FR Lakki Marwat
FR Tank
South Waziristan Agency
PUNJAB
BALOCHISTAN
FR D.I.Khan
N
0 30 60 120
Kilometers
Legend
Arabian Sea
International Boundary
Province Boundaries
District Boundaries
Earthquake Hazard
High
Very High
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
WFP
wfp.org


Federally Administered Tribal Areas (FATA)
Integrated Context Analysis - Areas
Erosion-Prone Surface Area & Negative Ecological Changes
AFGHANISTAN
Bajaur
Mohmand
Khyber
Kurram
Orakzai
Khyber Pakhtunkhwa
North Waziristan
South Waziristan
PUNJAB
BALOCHISTAN
N
0 30 60 120
Kilometers
Legend
Arabian Sea
International Boundary
Province Boundaries
District Boundaries
Average Ecological Change
Negative
Erosion Propensity
Erosion-Prone Area > 20%
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
WFP
wfp.org

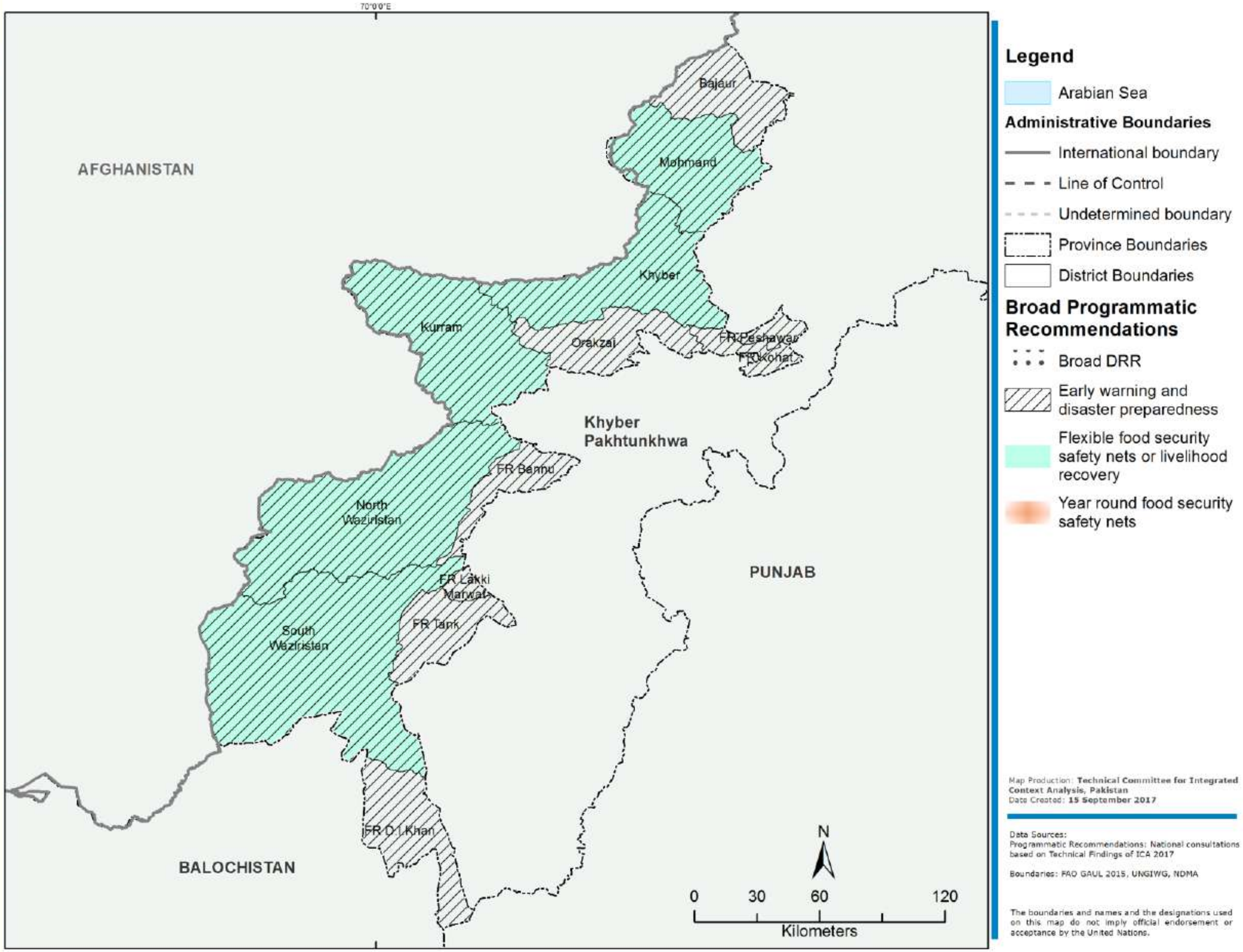

Federally Administered Tribal Areas (FATA)
Integrated Context Analysis - Areas
Population Density > 10 persons/km²
AFGHANISTAN
Bajaur Agency
Mohmand Agency
Khyber Agency
Kurram Agency
Orakzai Agency
FR Peshawar
FR Kohat
Khyber Pakhtunkhwa
FR Bannu
North Waziristan Agency
FR Lakki Marwat
FR Tank
South Waziristan Agency
PUNJAB
BALOCHISTAN
FR D.I.Khan
Legend
International Boundary
Province Boundaries
District Boundaries
ICA Areas
Area 1a
Area 1b
Area 2a
Area 2b
Area 3a
Area 3b
Area 4a
Area 4b
Area 5
Uncategorized
Shaded areas indicate where population density is greater than 10 persons per km².
N
0 30 60 120
Kilometers
WFP
wfp.org


Federally Administered Tribal Areas (FATA)
Two Most Dominant Land Cover Classes
AFGHANISTAN
Bajaur
Mohmand
Khyber
Kurram
Orakzai
FR Peshawar
FR Kohat
Khyber Pakhtunkhwa
FR Bannu
North Waziristan
FR Lakki Marwat
FR Tank
South Waziristan
PUNJAB
BALOCHISTAN
FR D.I.Khan
Legend
Arabian Sea
International Boundary
Province Boundaries
District Boundaries
Two Most Dominant Land Cover Classes
Rainfed Croplands & Forest
Rainfed Croplands & Vegetation
Rainfed Croplands & Bare areas
Rainfed Croplands & Irrigated croplands
Irrigated Croplands & Vegetation
Irrigated croplands & Bare areas
Irrigated croplands & Built-up areas
Grassland & Permanent Snow
Grasslands & Bare areas
Bare areas & Cropland/Vegetation
Bare areas & Sparse vegetation
Bare areas
N
0 30 60 120
Kilometers
WFP
wfp.org

Federally Administered Tribal Areas (FATA)

Integrated Context Analysis

Broad Programmatic Recommendations

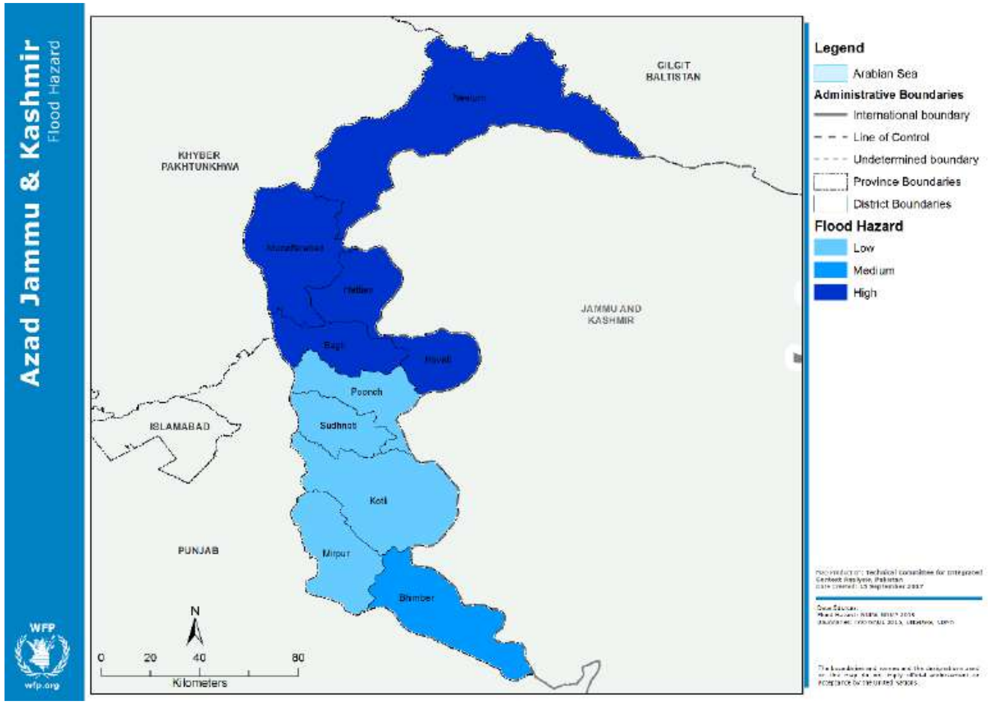


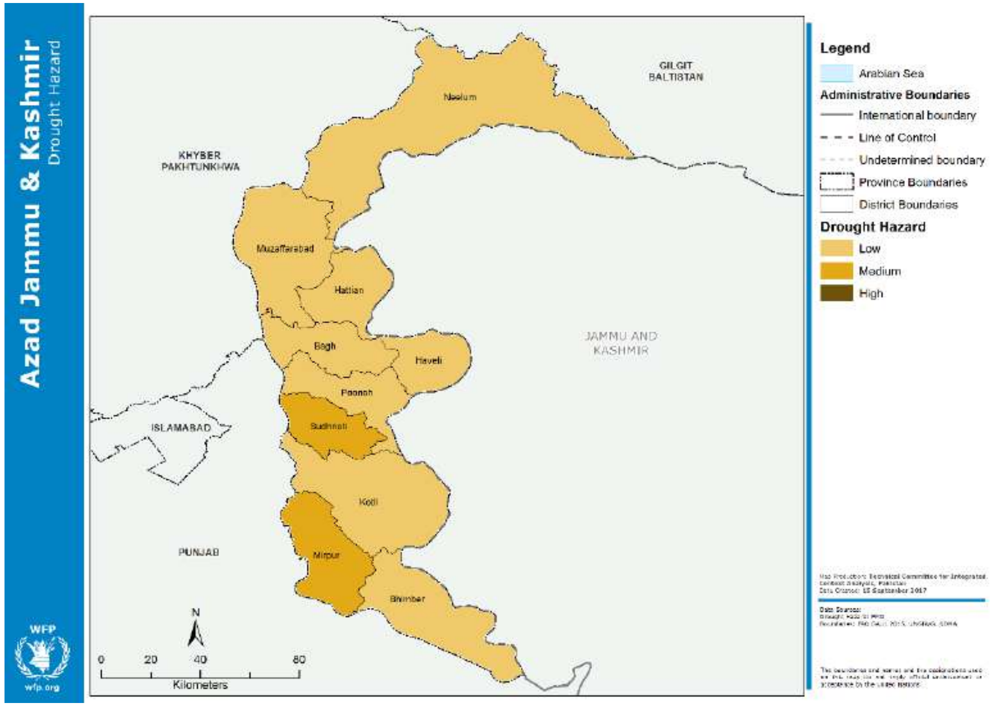
WFP
wfp.org

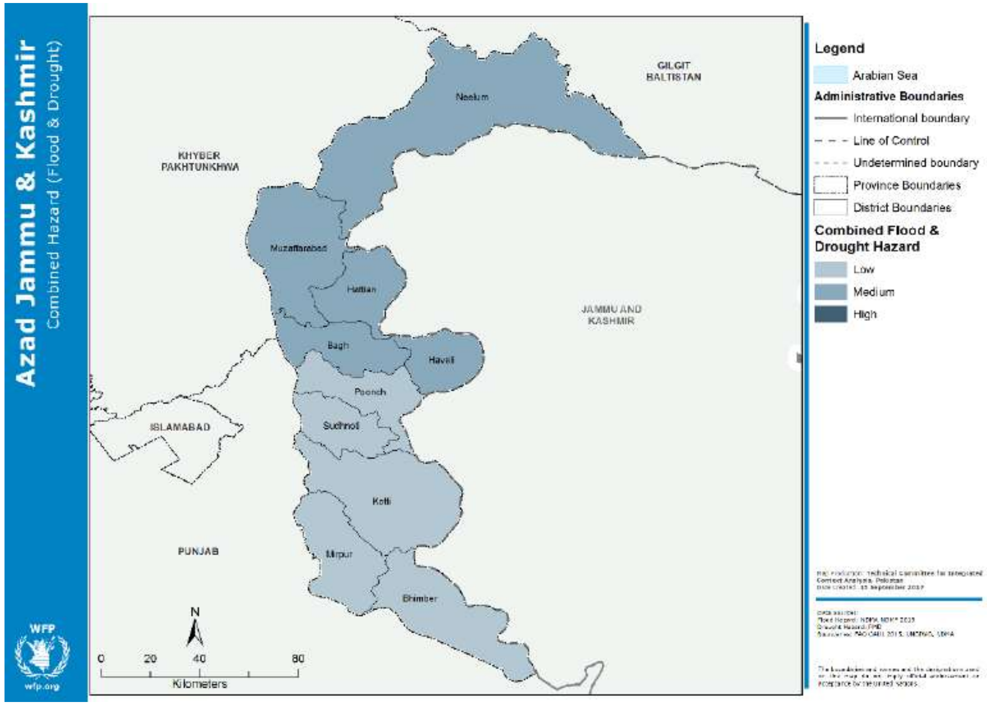
ICA Collecting Table – AJ&K

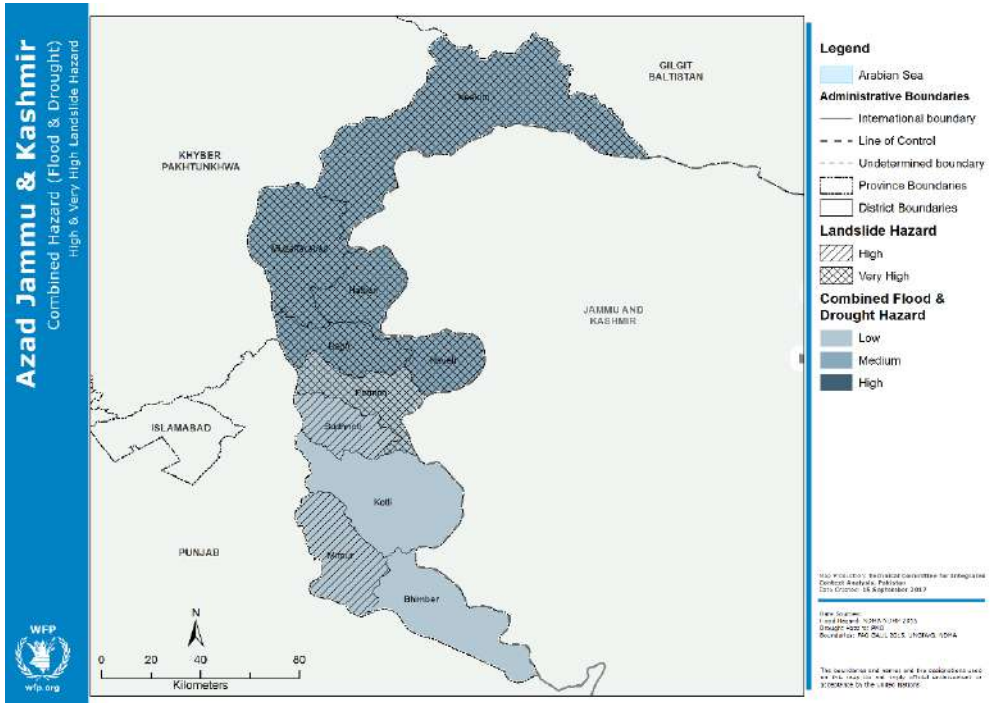
District	Vulnerability to Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Vulnerability to Food Insecurity with Final Natural Hazard classification		Estimated vulnerable population to food insecurity based on Multi-dimensional Poverty Index (MPI) = Incidence x Intensity, derived from 6 datasets of Pakistan Social and Living Measurement surveys (2004/05, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15)				Total projected population for 2015/16 *(from Provincial Bureaux of Statistics)*	Core Lenses				
	Classification of Recurrence of High Vulnerability to Food Insecurity (MPI > 0.329): *Low = 0-2 recurrences, Medium = 3-4 recurrences, High = 5-6 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification (*Flood & Drought)*	ICA Categories	ICA Areas	Long-term average population vulnerable to food insecurity *(Average of all PSLM rounds)*	Estimated chronically vulnerable population to food insecurity *(Average of 2 lowest PSLM rounds)*	Estimated highest number of vulnerable population to food insecurity *(Average of 2 highest PSLM rounds)*	Estimated potential additional vulnerable population to food insecurity in case of some MPI dimensions significantly deteriorate *(Average of 2 highest PSLM rounds Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Bagh	No Data	High	Low	Medium	Uncategorized	Uncategorized					395,000	4	1	4	4	13
Bhimber	No Data	Medium	Low	Low	Uncategorized	Uncategorized					467,000	2	1	2	4	9
Hattian Bala	No Data	High	Low	Medium	Uncategorized	Uncategorized					265,000	4	1	4	2	11
Haveli(Kahuta)	No Data	High	Low	Medium	Uncategorized	Uncategorized					157,000	4	1	4	3	12
Kotli	No Data	Low	Low	Low	Uncategorized	Uncategorized					870,000	2	1	3	4	10
Mirpur	No Data	Low	Medium	Low	Uncategorized	Uncategorized					473,000	3	1	2	4	10
Muzaffarabad	No Data	High	Low	Medium	Uncategorized	Uncategorized					726,000	4	3	4	4	15
Neelum	No Data	High	Low	Medium	Uncategorized	Uncategorized					201,000	4	3	4	2	13
Poonch	No Data	Low	Low	Low	Uncategorized	Uncategorized					599,000	4	1	3	4	12
Sudhnoti	No Data	Low	Medium	Low	Uncategorized	Uncategorized					313,000	3	1	3	4	11

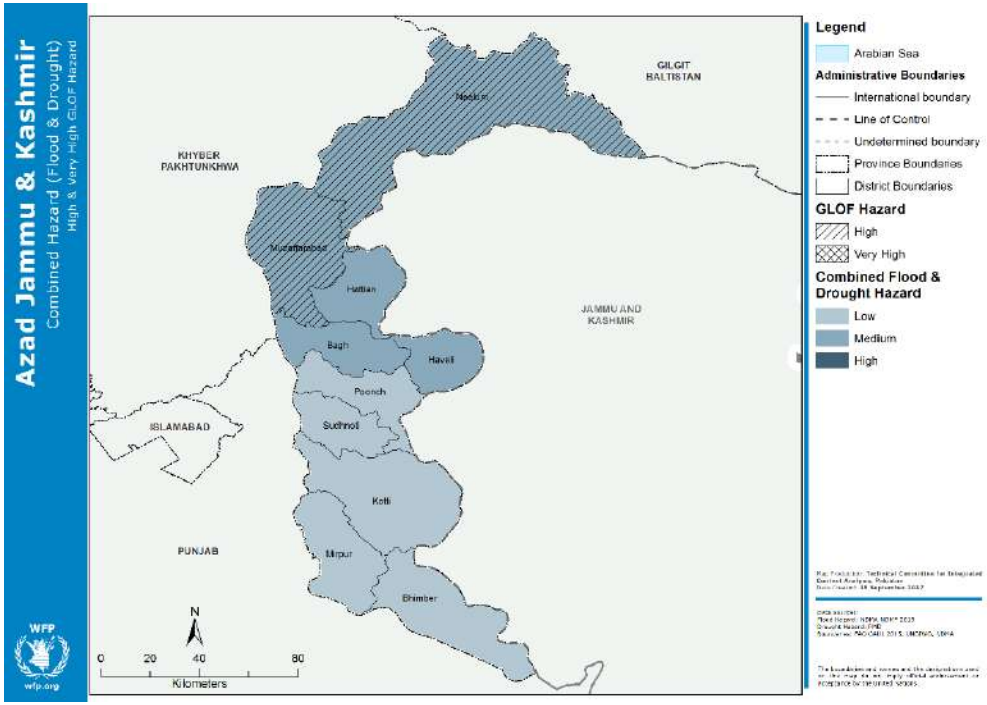
ICA Outcome Maps – AJ&K



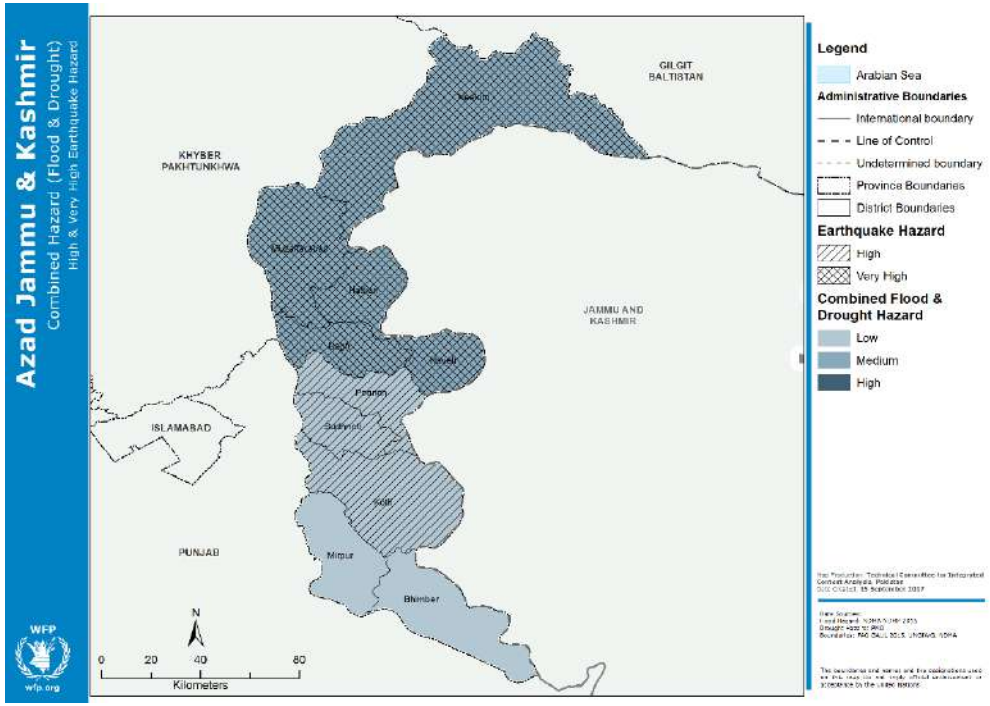



Azad Jammu & Kashmir
Combined Hazard (Flood & Drought)
GILGIT BALTISTAN
KHYBER PAKHTUNKHWA
Neelum
Muzaffarabad
Hattian
Bagh
Haveli
Poonch
Sudhnoti
Kotli
Mirpur
Bhimber
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
N
0
20
40
80
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Combined Flood & Drought Hazard
Low
Medium
High

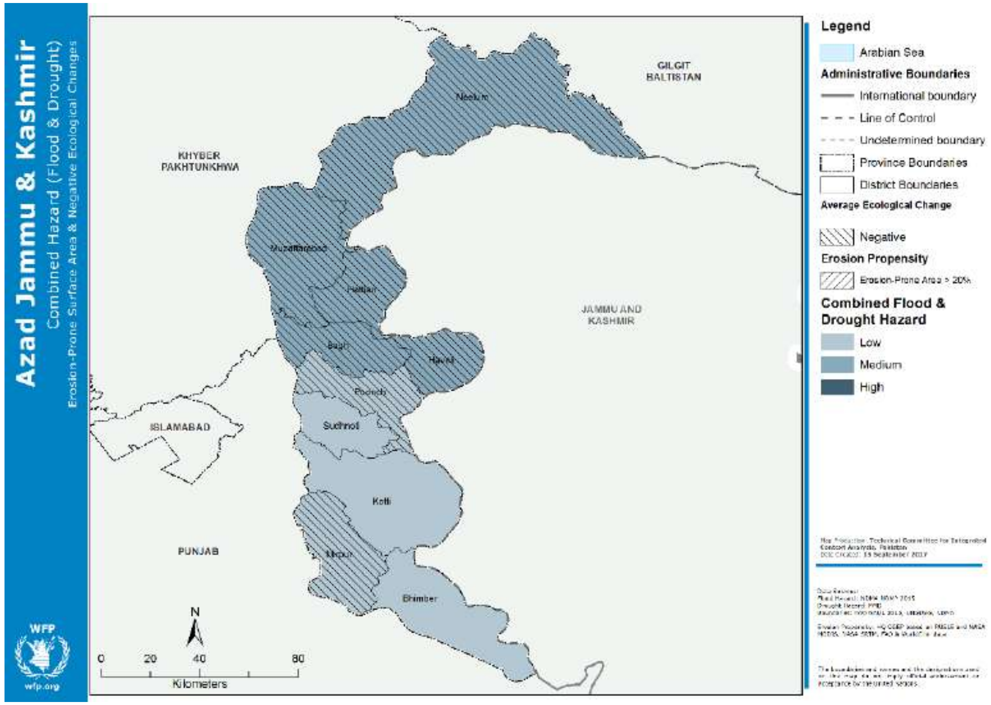

Azad Jammu & Kashmir
Combined Hazard (Flood & Drought)
High & Very High Landslide Hazard
GILGIT BALTISTAN
KHYBER PAKHTUNKHWA
Bagh
Haveli
Kotli
Bhimber
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
N
0
20
40
80
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Landslide Hazard
High
Very High
Combined Flood & Drought Hazard
Low
Medium
High

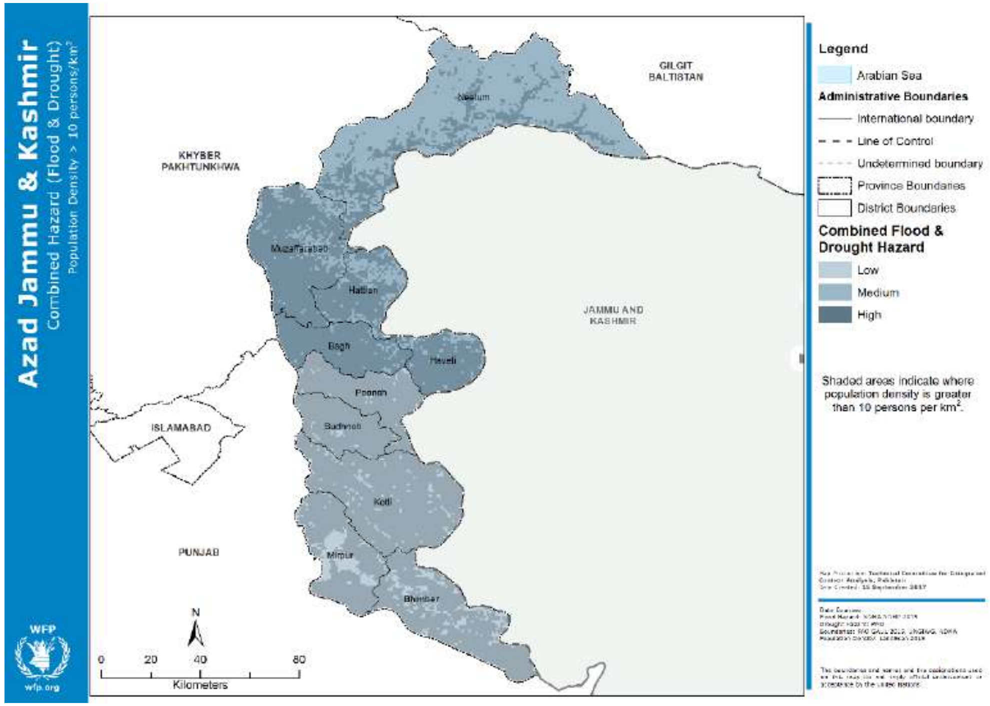


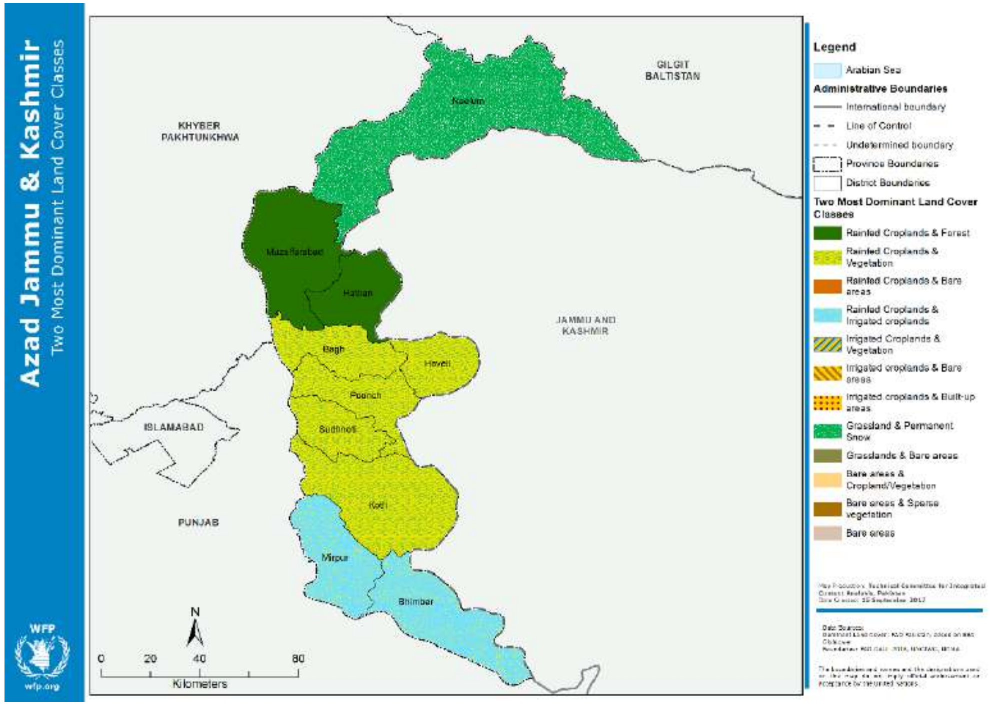
Azad Jammu & Kashmir
Combined Hazard (Flood & Drought)
High & Very High GLOF Hazard
GILGIT BALTISTAN
KHYBER PAKHTUNKHWA
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
Neelum
Muzaffarabad
Hattian
Bagh
Haveli
Poonch
Sudhnoti
Kotli
Mirpur
Bhimber
N
0 20 40 80
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
GLOF Hazard
High
Very High
Combined Flood & Drought Hazard
Low
Medium
High

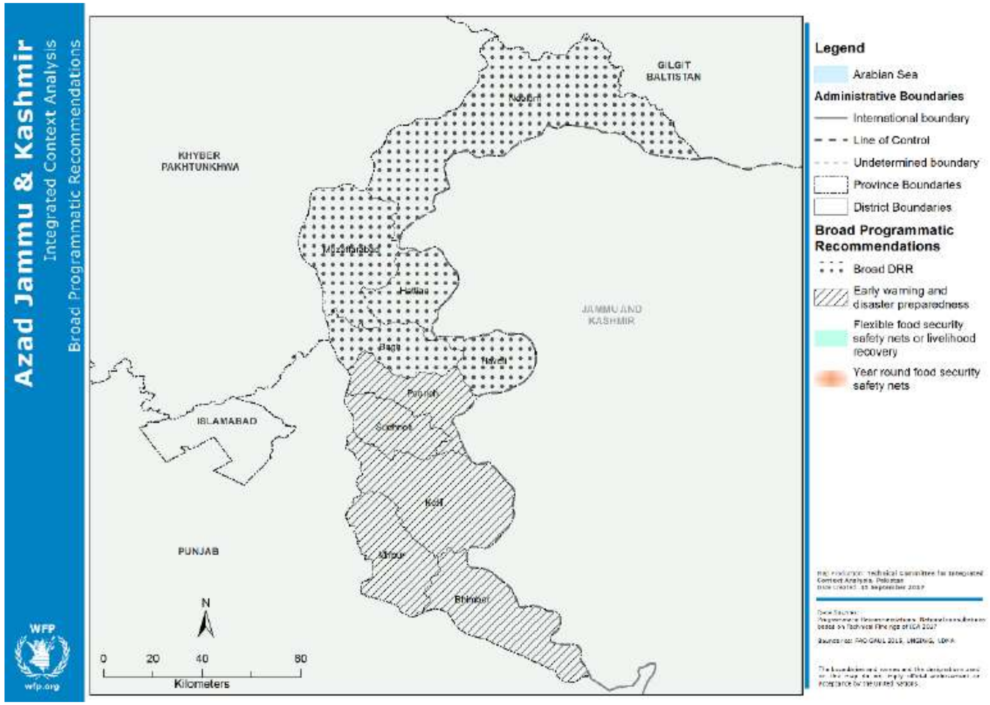


Azad Jammu & Kashmir
Combined Hazard (Flood & Drought)
High & Very High Earthquake Hazard
GILGIT BALTISTAN
KHYBER PAKHTUNKHWA
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
Poonch
Mirpur
Bhimber
N
0 20 40 80
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Earthquake Hazard
High
Very High
Combined Flood & Drought Hazard
Low
Medium
High


Azad Jammu & Kashmir
Combined Hazard (Flood & Drought)
Erosion-Prone Surface Area & Negative Ecological Changes
GILGIT BALTISTAN
KHYBER PAKHTUNKHWA
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
Neelum
Muzaffarabad
Hattian
Bagh
Haveli
Poonch
Sudhnoti
Kotli
Mirpur
Bhimber
N
0 20 40 80
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Average Ecological Change
Negative
Erosion Propensity
Erosion-Prone Area > 20%
Combined Flood & Drought Hazard
Low
Medium
High


Azad Jammu & Kashmir
Combined Hazard (Flood & Drought)
Population Density > 10 persons/km²
GILGIT BALTISTAN
KHYBER PAKHTUNKHWA
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
Neelum
Muzaffarabad
Hattian
Bagh
Haveli
Poonch
Sudhnoti
Kotli
Mirpur
Bhimber
N
0 20 40 80
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Combined Flood & Drought Hazard
Low
Medium
High
Shaded areas indicate where population density is greater than 10 persons per km².

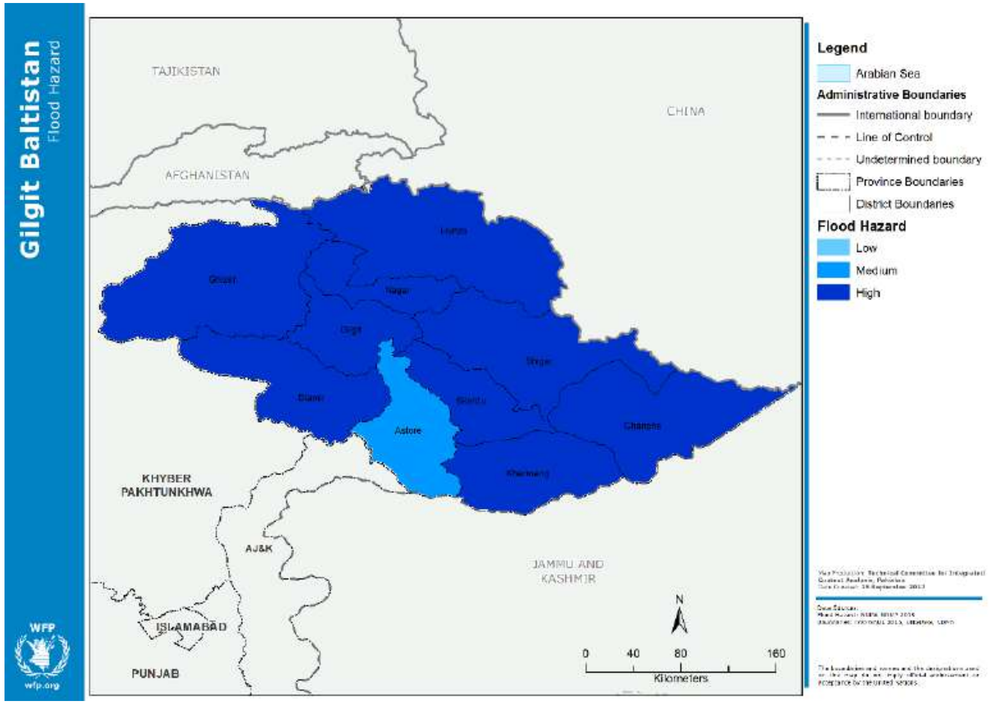

Azad Jammu & Kashmir
Two Most Dominant Land Cover Classes
GILGIT BALTISTAN
KHYBER PAKHTUNKHWA
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
Neelum
Muzaffarabad
Hattian
Bagh
Haveli
Poonch
Sudhnoti
Kotli
Mirpur
Bhimber
N
0 20 40 80
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Two Most Dominant Land Cover Classes
Rainfed Croplands & Forest
Rainfed Croplands & Vegetation
Rainfed Croplands & Bare areas
Rainfed Croplands & Irrigated croplands
Irrigated Croplands & Vegetation
Irrigated croplands & Bare areas
Irrigated croplands & Built-up areas
Grassland & Permanent Snow
Grasslands & Bare areas
Bare areas & Cropland/Vegetation
Bare areas & Sparse vegetation
Bare areas

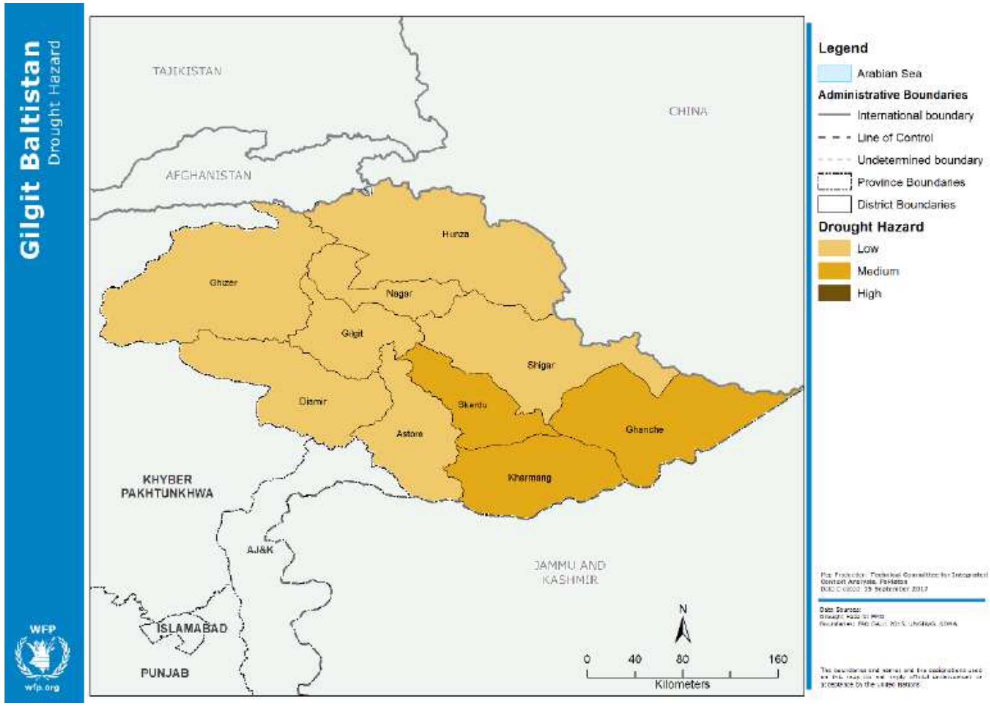

Azad Jammu & Kashmir
Integrated Context Analysis
Broad Programmatic Recommendations
GILGIT BALTISTAN
KHYBER PAKHTUNKHWA
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
Neelum
Muzaffarabad
Hattian
Bagh
Haveli
Poonch
Sudhnoti
Kotli
Mirpur
Bhimber
N
0 20 40 80
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Broad Programmatic Recommendations
Broad DRR
Early warning and disaster preparedness
Flexible food security safety nets or livelihood recovery
Year round food security safety nets

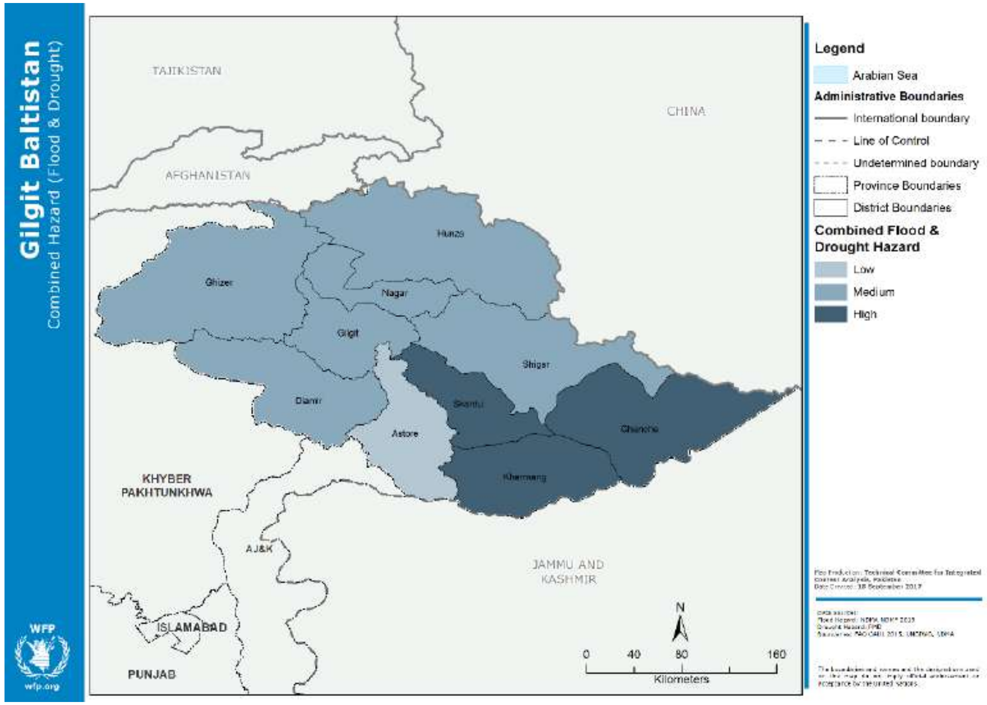
ICA Collecting Table – Gilgit Baltistan

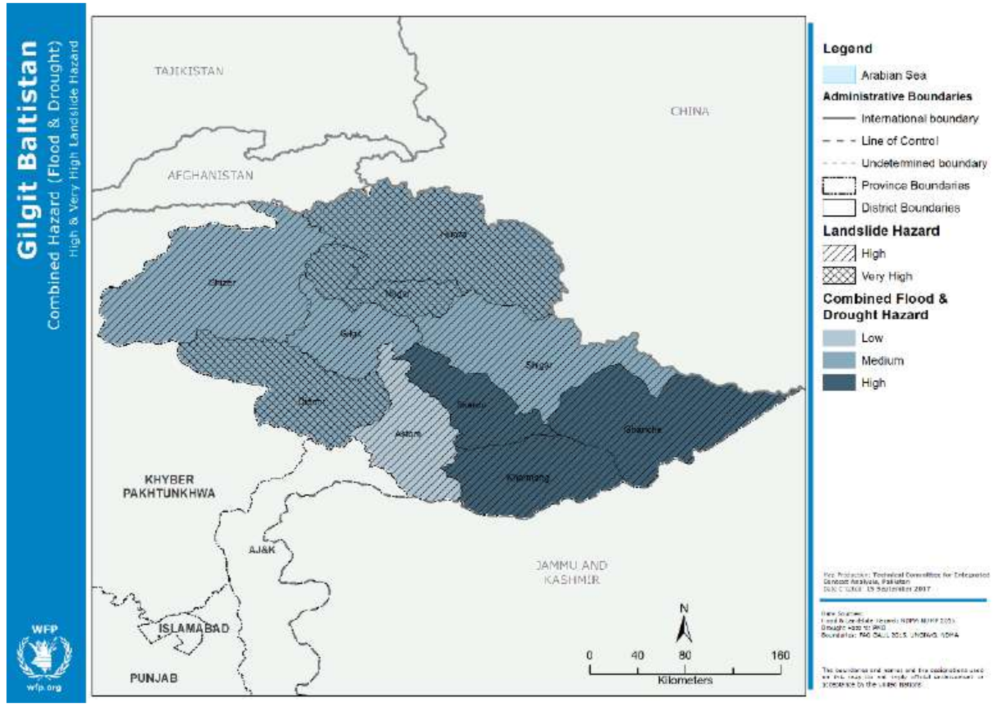
District	Vulnerability to Food Insecurity	Natural Hazards			ICA Areas and Categories based on combined Vulnerability to Food Insecurity with Final Natural Hazard Classification		Estimated vulnerable population to food insecurity based on Multi-dimensional Poverty Index (MPI) = Incidence x Intensity, derived from 6 datasets of Pakistan Social and Living Measurement surveys (2004/05, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15)				Total projected population for 2015/16 *(from Provincial Bureaux of Statistics)*	Core Lenses				
	Classification of Recurrence of High Vulnerability to Food Insecurity (MPI > 0.329): *Low = 0-2 recurrences, Medium = 3-4 recurrences, High = 5-6 recurrences*	Flood Hazard Classification *(NDMA)*	Drought Hazard Classification *(PMD)*	Combined Natural Hazard Classification *(Flood & Drought)*	ICA Categories	ICA Areas	Long-term average population vulnerable to food insecurity *(Average of all PSLM rounds)*	Estimated chronically vulnerable population to food insecurity *(Average of 2 lowest PSLM rounds)*	Estimated highest number of vulnerable population to food insecurity *(Average of 2 highest PSLM rounds)*	Estimated potential additional vulnerable population to food insecurity in case of some MPI dimensions significantly deteriorate *(Average of 2 highest PSLM rounds Minus Long-term Average)*		Landslide Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	GLOF Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Earthquake Hazard Classification (NDMA) *1 = Very Low/Low; 2 = Medium; 3 = High; 4 = Very High*	Percentage of Erosion-Prone Surface Area *1 = Low (< 20%); 2 = Medium (20 - 35%); 3 = High (35 - 50%); 4 = Very High (> 50%)*	Core Lenses: Summary Score
Astore	No Data	Medium	Low	Low	Uncategorized	Uncategorized						3	3	3	1	10
Gilgit	No Data	High	Low	Medium	Uncategorized	Uncategorized						3	3	3	1	10
Ghizer	No Data	High	Low	Medium	Uncategorized	Uncategorized						3	3	3	2	11
Shigar	No Data	High	Low	Medium	Uncategorized	Uncategorized						3	4	3	1	11
Diamir	No Data	High	Low	Medium	Uncategorized	Uncategorized						4	3	3	2	12
Ghanche	No Data	High	Medium	High	Uncategorized	Uncategorized						3	4	3	2	12
Skardu	No Data	High	Medium	High	Uncategorized	Uncategorized						3	4	3	2	12
Nagar	No Data	High	Low	Medium	Uncategorized	Uncategorized						4	4	3	2	13
Kharmang	No Data	High	Medium	High	Uncategorized	Uncategorized						3	4	3	3	13
Hunza	No Data	High	Low	Medium	Uncategorized	Uncategorized						4	4	3	3	14

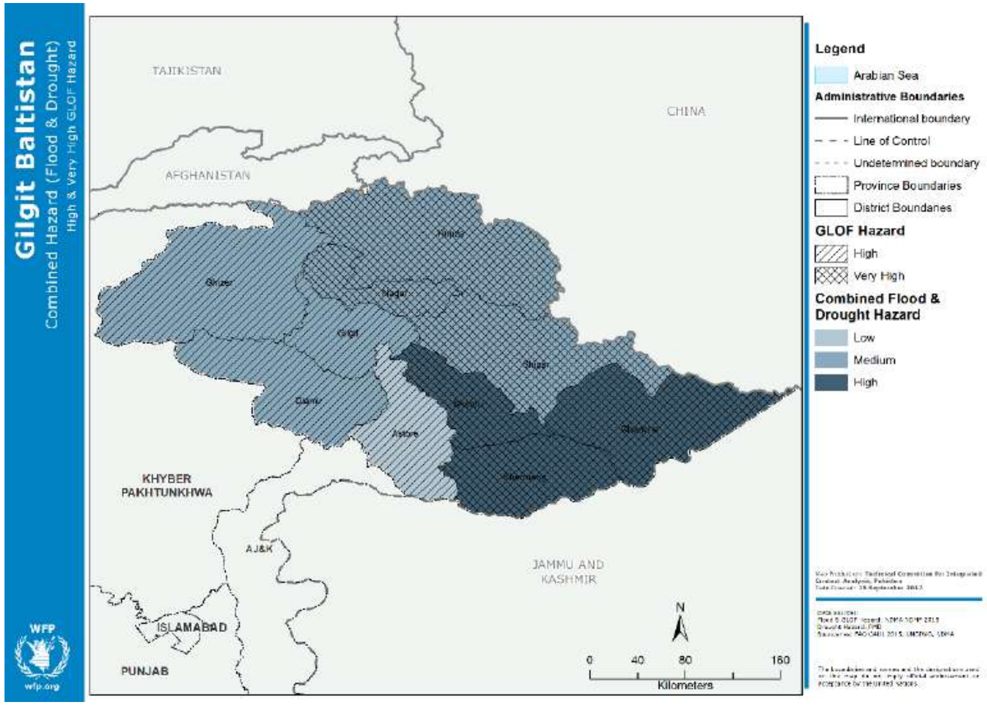
ICA Outcome Maps – Gilgit Baltistan

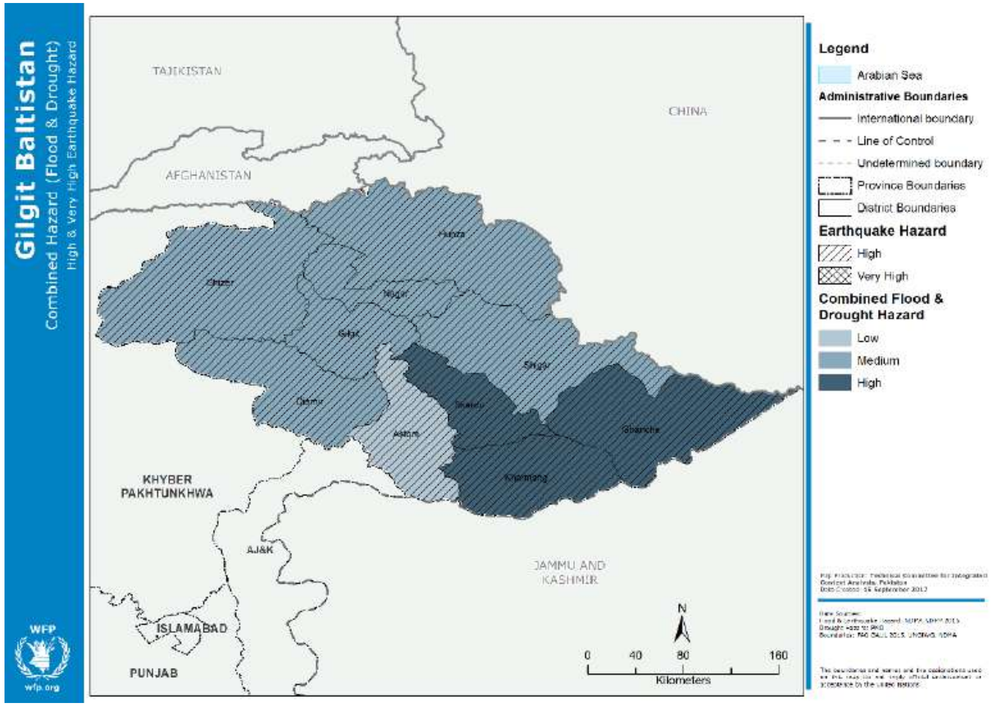


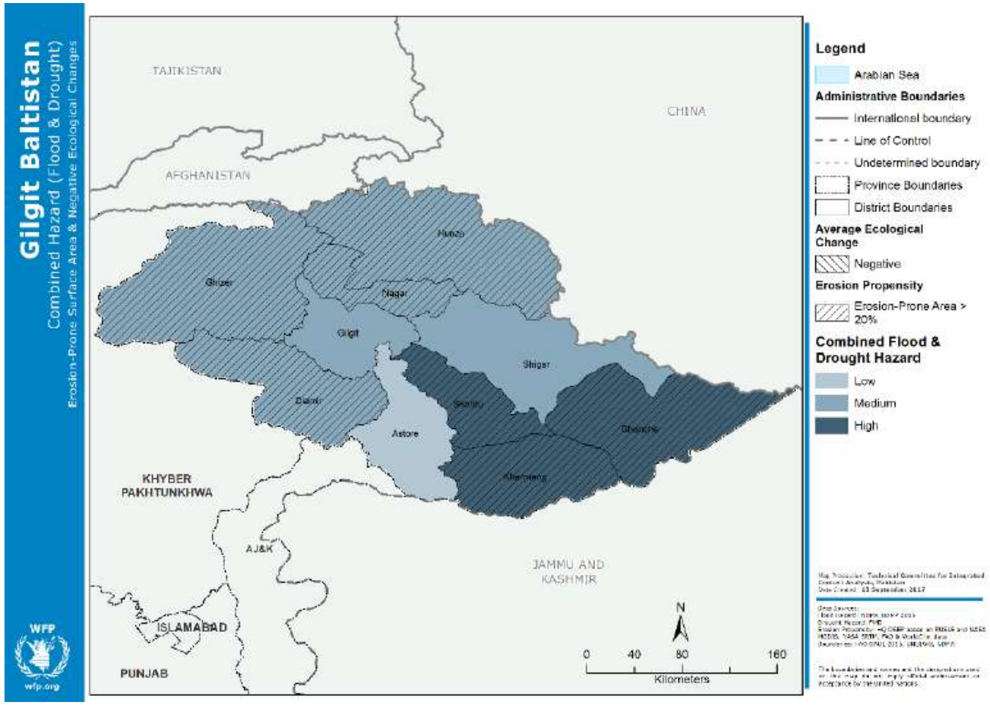


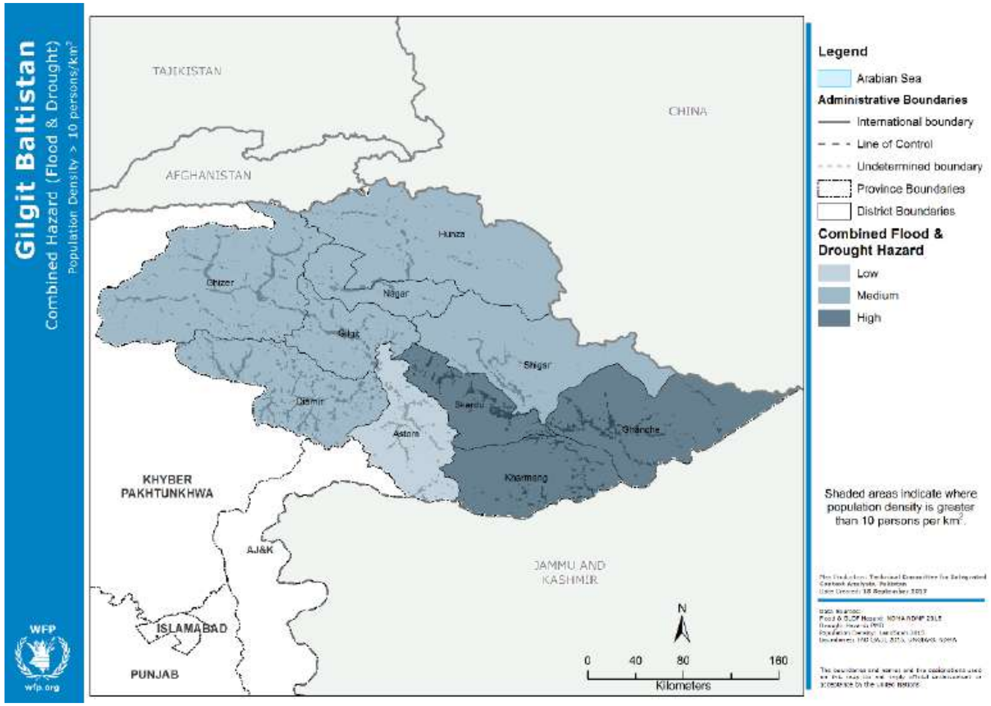

Gilgit Baltistan
Combined Hazard (Flood & Drought)
TAJIKISTAN
CHINA
AFGHANISTAN
Hunza
Ghizer
Nagar
Gilgit
Shigar
Diamir
Skardu
Astore
Ghanche
Kharmang
KHYBER PAKHTUNKHWA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
N
0 40 80 160
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Combined Flood & Drought Hazard
Low
Medium
High
WFP
wfp.org

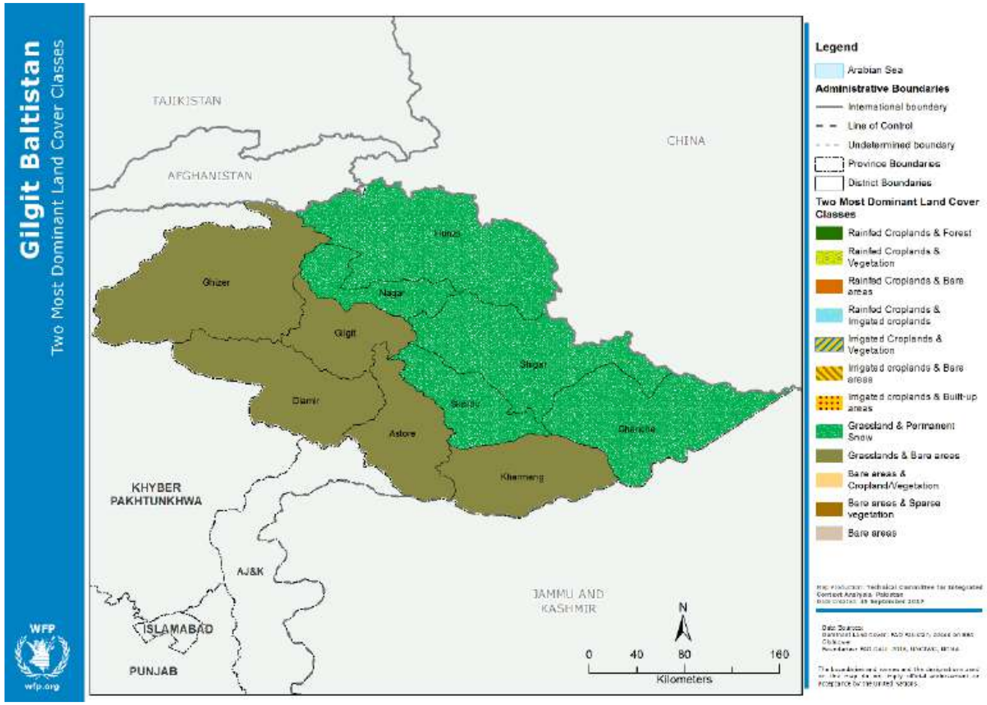

Gilgit Baltistan
Combined Hazard (Flood & Drought)
High & Very High Landslide Hazard
TAJIKISTAN
CHINA
AFGHANISTAN
KHYBER PAKHTUNKHWA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
N
0 40 80 160
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Landslide Hazard
High
Very High
Combined Flood & Drought Hazard
Low
Medium
High
WFP
wfp.org


Gilgit Baltistan
Combined Hazard (Flood & Drought)
High & Very High GLOF Hazard
TAJIKISTAN
CHINA
AFGHANISTAN
KHYBER PAKHTUNKHWA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
N
0 40 80 160
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
GLOF Hazard
High
Very High
Combined Flood & Drought Hazard
Low
Medium
High

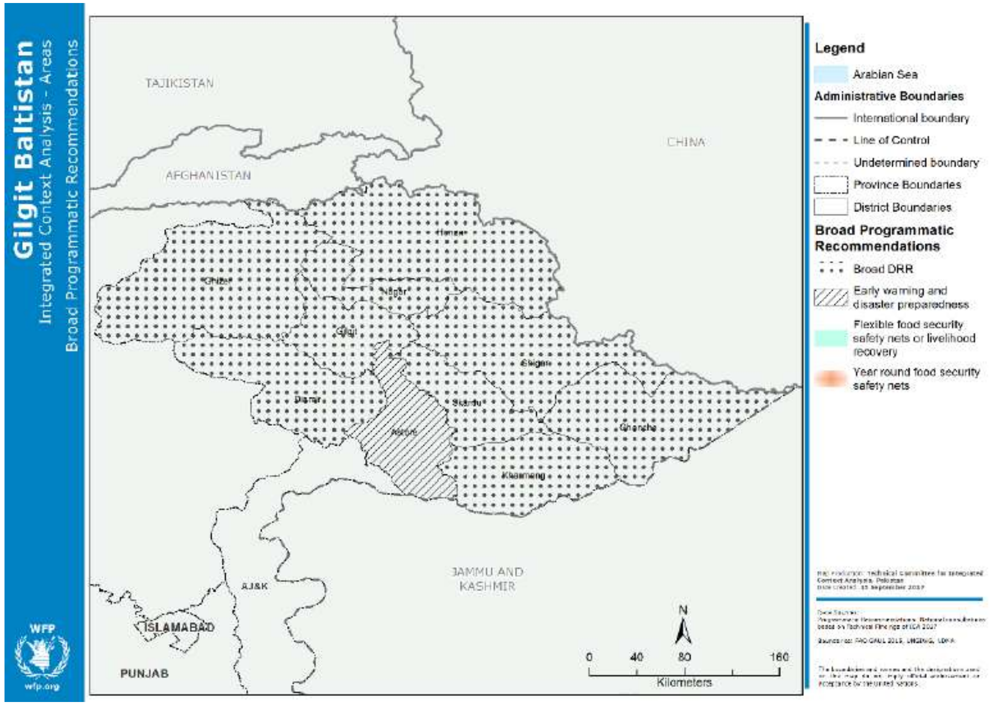

Gilgit Baltistan
Combined Hazard (Flood & Drought)
High & Very High Earthquake Hazard
TAJIKISTAN
CHINA
AFGHANISTAN
KHYBER PAKHTUNKHWA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
N
0 40 80 160
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Earthquake Hazard
High
Very High
Combined Flood & Drought Hazard
Low
Medium
High


Gilgit Baltistan
Combined Hazard (Flood & Drought)
Erosion-Prone Surface Area & Negative Ecological Changes
TAJIKISTAN
CHINA
AFGHANISTAN
Hunza
Ghizer
Nagar
Gilgit
Shigar
Diamir
Skardu
Astore
Ghanche
Kharmang
KHYBER PAKHTUNKHWA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
N
0 40 80 160
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Average Ecological Change
Negative
Erosion Propensity
Erosion-Prone Area > 20%
Combined Flood & Drought Hazard
Low
Medium
High


Gilgit Baltistan
Combined Hazard (Flood & Drought)
Population Density > 10 persons/km²
TAJIKISTAN
CHINA
AFGHANISTAN
Hunza
Ghizer
Nagar
Gilgit
Shigar
Diamir
Skardu
Astore
Ghanche
Kharmang
KHYBER PAKHTUNKHWA
AJ&K
JAMMU AND KASHMIR
ISLAMABAD
PUNJAB
N
0 40 80 160
Kilometers
WFP
wfp.org
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Combined Flood & Drought Hazard
Low
Medium
High
Shaded areas indicate where population density is greater than 10 persons per km².



Gilgit Baltistan
Two Most Dominant Land Cover Classes
TAJIKISTAN
AFGHANISTAN
CHINA
Hunza
Ghizer
Nagar
Gilgit
Shigar
Diamir
Skardu
Astore
Ghanche
Kharmang
KHYBER PAKHTUNKHWA
AJ&K
ISLAMABAD
PUNJAB
JAMMU AND KASHMIR
N
0 40 80 160
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Two Most Dominant Land Cover Classes
Rainfed Croplands & Forest
Rainfed Croplands & Vegetation
Rainfed Croplands & Bare areas
Rainfed Croplands & Irrigated croplands
Irrigated Croplands & Vegetation
Irrigated croplands & Bare areas
Irrigated croplands & Built-up areas
Grassland & Permanent Snow
Grasslands & Bare areas
Bare areas & Cropland/Vegetation
Bare areas & Sparse vegetation
Bare areas
WFP
wfp.org



Gilgit Baltistan
Integrated Context Analysis - Areas
Broad Programmatic Recommendations
TAJIKISTAN
AFGHANISTAN
CHINA
Hunza
Ghizer
Nagar
Gilgit
Ghigar
Diamir
Skardu
Astore
Ghanche
Kharmang
AJ&K
ISLAMABAD
PUNJAB
JAMMU AND KASHMIR
N
0 40 80 160
Kilometers
Legend
Arabian Sea
Administrative Boundaries
International boundary
Line of Control
Undetermined boundary
Province Boundaries
District Boundaries
Broad Programmatic Recommendations
Broad DRR
Early warning and disaster preparedness
Flexible food security safety nets or livelihood recovery
Year round food security safety nets
WFP
wfp.org

Annex IV - Percentage Contribution of Indicators in MPI, 2014/15

Percentage Contribution of Indicators to the National, Rural/Urban, Provincial and Regional MPI, 2014/15

	Education			**Health**				**Standard of Living**							
	Years of schooling	School Attendance	Educational quality	Access to health facilities	Full immunisation	Ante-natal care	Assisted delivery	Improved walls	Overcrowding	Electricity	Sanitation	Water	Cooking Fuel	Assets	Land & Livestock
National	29.7%	10.5%	2.6%	19.8%	2.2%	1.9%	1.8%	1.9%	2.6%	1.4%	5.3%	1.7%	8.5%	6.3%	3.8%
Rural	29.2%	10.0%	2.5%	20.3%	2.1%	1.9%	1.8%	1.9%	2.5%	1.4%	5.6%	1.7%	8.7%	6.2%	4.1%
Urban	36.9%	17.0%	3.0%	12.5%	3.3%	2.5%	2.1%	1.2%	3.6%	0.4%	2.2%	1.3%	6.3%	7.7%	0.0%
Punjab	31.1%	9.7%	2.3%	21.5%	2.0%	1.7%	1.3%	1.2%	2.8%	1.3%	5.0%	0.5%	9.2%	6.8%	3.7%
Sindh	28.1%	11.9%	2.9%	16.7%	2.0%	1.9%	2.3%	2.7%	3.1%	1.6%	6.2%	1.5%	7.8%	7.3%	4.0%
KP	29.3%	9.7%	2.5%	21.4%	2.5%	2.2%	2.1%	1.3%	1.9%	0.7%	3.9%	3.7%	8.5%	6.0%	4.3%
Balochistan	28.3%	11.5%	3.1%	17.3%	2.6%	2.4%	2.2%	3.3%	1.4%	2.0%	6.9%	4.1%	7.3%	4.8%	2.8%
FATA	35.5%	16.0%	1.1%	8.9%	4.5%	0.3%	1.7%	4.6%	1.2%	1.7%	1.3%	6.3%	4.9%	6.6%	5.4%

Percentage Contribution of Indicators to Districts' MPI, 2014/15

District	Education			Health				Standard of Living							
	Years of schooling	School Attendance	Educational quality	Access to health facilities	Full immunisation	Ante-natal care	Assisted delivery	Improved walls	Overcrowding	Electricity	Sanitation	Water	Cooking Fuel	Assets	Land & Livestock
Abbottabad	30.64%	2.25%	1.58%	29.65%	0.76%	1.54%	0.79%	0.82%	1.10%	0.25%	2.78%	3.52%	9.55%	8.37%	6.40%
Attock	40.07%	7.62%	1.54%	6.00%	2.24%	2.20%	2.32%	0.45%	2.12%	1.83%	6.22%	3.11%	10.81%	7.79%	5.69%
Awaran	25.70%	11.66%	1.05%	13.95%	1.56%	1.16%	1.42%	3.35%	1.31%	6.45%	8.82%	4.15%	8.81%	6.84%	3.77%
Badin	25.96%	9.68%	1.84%	20.60%	1.45%	1.21%	1.35%	3.26%	2.68%	2.94%	7.59%	0.71%	8.01%	7.49%	5.23%
Bahawalnagar	31.62%	8.77%	2.54%	22.65%	1.91%	1.60%	1.15%	1.72%	2.63%	1.96%	4.26%	0.59%	9.76%	6.61%	2.22%
Bahawalpur	30.13%	10.93%	2.37%	23.20%	1.96%	1.29%	1.87%	1.30%	2.55%	1.72%	4.61%	0.12%	8.98%	6.59%	2.37%
Bannu	30.65%	11.98%	0.89%	23.25%	2.80%	3.55%	1.29%	1.93%	1.53%	0.04%	3.75%	0.18%	8.98%	4.00%	5.18%
Barkhan	24.34%	9.99%	5.58%	24.24%	1.78%	1.56%	2.82%	2.83%	0.15%	3.34%	5.13%	5.59%	6.92%	3.93%	1.81%
Batagram	26.77%	10.86%	3.61%	21.21%	3.01%	3.02%	3.06%	0.20%	1.51%	1.12%	3.30%	3.59%	8.44%	7.27%	3.02%
Bhakkar	30.44%	6.66%	2.01%	27.28%	2.06%	1.94%	0.58%	1.39%	2.04%	1.17%	6.83%	0.00%	9.54%	5.95%	2.11%
Bolan/Kachhi	27.11%	10.98%	2.82%	13.64%	2.17%	2.56%	1.92%	4.03%	1.80%	0.90%	8.02%	7.16%	8.17%	6.12%	2.59%
Buner	29.90%	9.14%	2.00%	20.15%	2.36%	1.78%	2.10%	0.86%	2.33%	1.39%	4.53%	4.81%	9.14%	5.87%	3.62%
Chagai	26.73%	10.03%	3.81%	11.57%	1.66%	1.88%	1.10%	3.75%	0.88%	6.23%	7.35%	6.58%	7.70%	5.90%	4.86%
Chakwal	32.92%	4.15%	1.24%	24.79%	1.65%	1.14%	1.04%	0.73%	0.85%	2.35%	4.67%	2.57%	10.51%	7.37%	4.01%
Charsadda	33.50%	8.67%	1.01%	17.99%	2.89%	2.17%	2.06%	2.02%	2.66%	0.07%	4.23%	2.53%	8.29%	5.72%	6.19%
Chiniot	32.74%	10.22%	2.55%	18.63%	1.84%	0.91%	1.65%	0.65%	2.80%	0.69%	7.13%	0.02%	9.57%	7.31%	3.31%
Chitral	29.52%	5.99%	2.13%	22.66%	1.17%	1.40%	3.11%	3.28%	1.50%	0.08%	1.78%	3.65%	10.61%	9.39%	3.73%
D.G. Khan	28.12%	12.40%	2.72%	19.10%	2.98%	2.28%	1.51%	3.24%	1.87%	0.81%	5.48%	2.94%	8.50%	5.03%	3.03%
D.I. Khan	27.99%	11.71%	2.69%	19.70%	2.44%	2.45%	2.67%	2.38%	2.32%	2.22%	5.73%	1.07%	8.52%	6.08%	2.02%
Dadu	21.95%	6.88%	4.29%	26.75%	2.36%	2.89%	3.35%	2.51%	3.44%	0.17%	7.72%	1.26%	7.32%	5.84%	3.27%
Dera Bugti	29.53%	14.62%	4.24%	0.63%	2.56%	3.88%	4.39%	3.86%	2.97%	2.39%	7.54%	5.68%	6.62%	5.84%	5.26%
Faisalabad	34.42%	8.59%	2.82%	17.21%	1.50%	1.98%	1.48%	0.27%	3.47%	0.24%	3.14%	1.50%	8.88%	8.61%	5.89%
Gawadar	32.29%	8.93%	2.52%	19.18%	1.85%	2.35%	1.80%	2.26%	1.06%	1.54%	7.93%	1.84%	9.23%	3.97%	3.27%
Ghotki	30.37%	16.24%	3.52%	11.11%	2.74%	2.60%	3.25%	2.42%	3.76%	0.53%	4.73%	0.05%	8.03%	6.99%	3.66%
Gujranwala	34.45%	8.84%	2.68%	19.48%	2.99%	2.14%	1.86%	0.27%	3.09%	0.35%	2.59%	0.00%	6.94%	6.93%	7.40%
Gujrat	27.99%	3.66%	0.96%	35.09%	1.08%	1.22%	1.91%	0.11%	2.86%	0.00%	3.06%	0.00%	8.52%	5.67%	7.87%

District	Education			Health				Standard of Living							
	Years of schooling	School Attendance	Educational quality	Access to health facilities	Full immunisation	Ante-natal care	Assisted delivery	Improved walls	Overcrowding	Electricity	Sanitation	Water	Cooking Fuel	Assets	Land & Livestock
Hafizabad	31.76%	6.70%	2.10%	27.05%	1.56%	1.97%	1.48%	0.60%	2.58%	0.27%	5.22%	0.00%	8.24%	6.37%	4.12%
Hangu	33.61%	12.09%	1.16%	19.72%	1.93%	1.01%	1.58%	0.53%	1.17%	0.45%	2.88%	4.25%	8.63%	5.32%	5.66%
Haripur	27.64%	4.36%	3.75%	27.20%	3.05%	1.13%	2.56%	0.47%	1.58%	0.61%	3.35%	4.16%	9.14%	6.75%	4.25%
Harnai	23.13%	10.66%	4.38%	23.20%	2.40%	1.29%	2.00%	3.17%	1.26%	3.50%	6.37%	5.03%	7.08%	5.17%	1.36%
Hyderabad	31.32%	14.83%	2.68%	14.75%	2.52%	1.23%	1.61%	1.87%	3.73%	0.44%	5.67%	0.32%	7.14%	7.88%	4.01%
Islamabad	38.50%	11.46%	2.67%	14.15%	4.62%	2.37%	2.80%	0.00%	2.38%	0.00%	0.99%	4.08%	5.21%	6.58%	4.18%
Jacobabad	29.56%	14.37%	3.06%	10.97%	2.21%	1.81%	2.81%	2.33%	3.59%	0.74%	6.73%	1.36%	8.35%	7.72%	4.40%
Jaffarabad	29.58%	13.07%	2.48%	11.94%	2.89%	2.26%	4.23%	3.31%	2.78%	0.16%	7.40%	2.83%	8.36%	6.99%	1.72%
Jamshoro	27.72%	9.70%	2.98%	20.81%	1.67%	0.87%	1.87%	2.06%	2.90%	1.25%	6.73%	2.58%	7.68%	6.83%	4.37%
Jhal Magsi	26.38%	12.61%	5.06%	12.11%	3.52%	2.83%	1.67%	2.85%	1.77%	2.31%	7.84%	5.58%	8.10%	5.36%	2.01%
Jhang	31.99%	7.71%	1.38%	18.89%	1.87%	2.34%	2.59%	1.66%	2.42%	2.45%	7.09%	0.04%	9.89%	7.91%	1.77%
Jhelum	38.93%	7.79%	1.85%	11.43%	2.93%	1.69%	0.60%	0.07%	3.46%	0.74%	7.26%	2.03%	10.08%	5.71%	5.41%
Kalat	27.81%	7.49%	1.21%	18.12%	1.05%	2.03%	3.34%	4.95%	1.61%	0.71%	9.97%	2.51%	9.96%	4.02%	5.21%
Kambar Shahdadkot	28.39%	12.07%	2.90%	15.08%	3.29%	3.36%	3.05%	2.51%	3.50%	0.44%	4.71%	1.60%	8.13%	7.57%	3.41%
Karachi	36.29%	17.10%	4.08%	6.89%	2.56%	0.96%	1.95%	0.48%	3.63%	3.07%	1.95%	2.65%	2.12%	10.59%	5.67%
Karak	24.03%	8.05%	2.10%	26.12%	3.22%	3.81%	1.92%	2.22%	1.85%	1.14%	4.78%	4.31%	6.88%	5.32%	4.26%
Kashmore	27.52%	15.46%	4.26%	16.67%	1.89%	2.07%	3.12%	2.11%	3.65%	0.25%	5.47%	0.14%	7.76%	7.07%	2.56%
Kasur	36.92%	9.20%	3.48%	9.19%	3.16%	2.80%	0.08%	0.75%	4.31%	0.81%	2.88%	0.18%	10.62%	8.24%	7.39%
Khairpur	30.02%	12.24%	3.19%	12.88%	2.21%	2.69%	3.55%	3.18%	3.49%	0.67%	6.65%	0.41%	8.50%	6.78%	3.53%
Khanewal	31.62%	9.82%	2.22%	20.92%	1.58%	1.33%	1.79%	1.28%	2.68%	1.02%	5.58%	0.05%	9.56%	6.95%	3.60%
Kharan	26.71%	9.13%	4.78%	22.55%	1.36%	1.98%	1.88%	3.51%	1.27%	2.21%	7.21%	2.02%	8.03%	4.64%	2.72%
Khushab	30.07%	6.82%	1.87%	27.82%	1.47%	1.67%	1.02%	0.39%	1.58%	2.11%	4.93%	1.20%	9.42%	6.88%	2.74%
Khuzdar	31.13%	9.94%	1.42%	7.06%	2.35%	1.94%	3.16%	4.64%	1.12%	4.58%	8.93%	4.50%	9.56%	5.70%	3.97%
Killa Abdullah	24.87%	13.06%	3.72%	22.65%	3.64%	2.75%	2.06%	3.36%	1.07%	0.48%	6.37%	4.58%	7.06%	3.19%	1.15%
Killa Saifullah	33.90%	12.43%	1.42%	18.67%	2.72%	2.88%	3.86%	1.67%	0.13%	1.40%	7.96%	1.01%	9.37%	1.08%	1.49%
Kohat	31.66%	8.15%	1.60%	23.05%	2.55%	1.78%	1.87%	1.11%	1.08%	0.53%	5.63%	3.14%	8.55%	5.08%	4.21%
Kohistan	26.96%	12.10%	2.80%	16.57%	2.25%	2.66%	2.60%	0.62%	1.33%	2.56%	5.98%	6.80%	7.84%	7.08%	1.86%

District	Education			Health				Standard of Living							
	Years of schooling	School Attendance	Educational quality	Access to health facilities	Full immunisation	Ante-natal care	Assisted delivery	Improved walls	Overcrowding	Electricity	Sanitation	Water	Cooking Fuel	Assets	Land & Livestock
Kohlu	27.14%	11.98%	2.91%	15.94%	0.89%	1.75%	0.72%	3.59%	1.75%	2.51%	7.86%	6.61%	8.09%	5.54%	2.72%
Lahore	42.44%	18.08%	5.12%	2.07%	5.94%	3.21%	0.49%	0.00%	5.77%	0.34%	0.11%	0.00%	3.97%	6.49%	5.96%
Lakki Marwat	28.17%	8.17%	1.70%	24.23%	3.04%	3.89%	1.80%	3.04%	1.74%	0.08%	4.03%	2.29%	9.00%	5.31%	3.48%
Larkana	31.14%	14.82%	2.52%	11.92%	2.81%	3.11%	2.72%	2.92%	3.96%	0.55%	3.90%	0.10%	7.62%	7.76%	4.15%
Lasbela	26.91%	8.59%	3.34%	19.11%	0.81%	0.64%	1.57%	2.17%	1.72%	4.10%	7.39%	5.40%	7.52%	7.12%	3.59%
Layyah	27.81%	5.73%	2.19%	29.96%	1.50%	2.37%	0.19%	1.25%	2.88%	3.21%	4.28%	0.03%	9.96%	6.66%	1.99%
Lodhran	31.14%	11.22%	1.73%	20.39%	1.19%	1.36%	0.93%	1.13%	2.50%	1.45%	6.77%	0.17%	9.58%	7.00%	3.45%
Loralai	33.88%	9.44%	1.80%	6.59%	1.98%	2.22%	0.79%	4.75%	1.32%	4.20%	8.15%	5.76%	10.10%	6.49%	2.53%
Lower Dir	30.37%	9.91%	3.63%	16.03%	2.37%	2.75%	2.50%	0.11%	2.04%	0.47%	2.93%	6.40%	10.04%	6.20%	4.25%
Malakand	30.10%	7.44%	2.35%	22.29%	2.38%	2.58%	2.55%	1.00%	1.70%	0.31%	3.40%	3.91%	9.16%	5.04%	5.78%
Mandi Bahauddin	32.32%	4.50%	0.61%	30.30%	2.05%	1.13%	1.77%	0.51%	2.27%	0.06%	3.95%	0.09%	9.50%	5.06%	5.87%
Mansehra	25.66%	6.73%	2.20%	25.33%	1.10%	1.87%	1.59%	0.60%	2.19%	0.26%	3.34%	5.04%	9.40%	8.37%	6.32%
Mardan	35.37%	7.52%	0.98%	20.24%	3.25%	1.37%	1.97%	1.97%	2.45%	0.30%	3.96%	1.26%	8.94%	5.33%	5.06%
Mastung	26.01%	8.16%	0.99%	14.54%	2.74%	2.55%	3.92%	4.13%	2.43%	2.97%	9.46%	1.50%	9.57%	5.68%	5.34%
Matiari	28.95%	11.28%	1.63%	18.69%	1.84%	1.06%	1.28%	2.45%	3.23%	0.94%	8.05%	0.01%	7.85%	7.38%	5.34%
Mianwali	27.94%	7.03%	2.71%	28.63%	1.30%	1.65%	0.89%	0.91%	1.62%	2.00%	4.60%	1.94%	9.19%	5.78%	3.80%
Mirpurkhas	26.63%	10.28%	2.60%	20.04%	1.27%	2.01%	2.30%	3.12%	2.64%	2.24%	5.04%	2.53%	7.86%	6.92%	4.52%
Multan	31.14%	11.77%	1.67%	19.76%	1.61%	1.71%	1.76%	1.25%	2.72%	0.67%	5.45%	0.20%	9.07%	6.75%	4.47%
Musakhel	30.43%	11.77%	1.63%	12.51%	2.14%	1.86%	0.47%	3.81%	0.95%	3.77%	5.48%	6.90%	9.03%	6.94%	2.31%
Muzaffargarh	29.22%	9.87%	2.61%	23.19%	1.61%	1.19%	0.97%	1.58%	2.75%	1.30%	5.94%	0.13%	8.96%	7.01%	3.68%
Nankana Sahib	33.48%	9.13%	2.95%	15.90%	1.87%	1.19%	0.46%	0.92%	3.24%	1.18%	4.92%	0.91%	10.30%	8.20%	5.36%
Narowal	27.85%	5.91%	0.42%	30.43%	2.85%	3.62%	0.08%	0.12%	2.75%	0.09%	4.24%	0.12%	10.70%	6.59%	4.23%
Nasirabad	30.40%	15.36%	2.21%	7.47%	3.00%	2.38%	2.73%	3.58%	1.83%	1.77%	8.05%	4.79%	8.51%	6.60%	1.31%
Naushehro Feroze	22.24%	11.11%	4.17%	25.31%	2.17%	1.97%	2.16%	2.51%	3.53%	0.50%	5.78%	0.29%	8.81%	5.58%	3.85%
Nawabshah/ Shaheed Benazirabad	28.51%	10.87%	2.99%	25.53%	1.10%	1.55%	0.09%	2.47%	2.89%	0.22%	6.79%	0.06%	7.46%	6.19%	3.27%
Nowshehra	33.21%	9.50%	2.03%	24.08%	1.98%	1.23%	2.24%	0.56%	2.05%	0.00%	2.46%	2.36%	6.09%	5.01%	7.22%

District	Education			Health				Standard of Living							
	Years of schooling	School Attendance	Educational quality	Access to health facilities	Full immunisation	Ante-natal care	Assisted delivery	Improved walls	Overcrowding	Electricity	Sanitation	Water	Cooking Fuel	Assets	Land & Livestock
Nushki	31.67%	13.70%	2.55%	15.95%	2.86%	3.18%	1.57%	3.06%	0.90%	1.68%	7.75%	1.01%	7.67%	3.72%	2.72%
Okara	32.85%	7.54%	1.65%	24.76%	1.77%	2.32%	0.20%	0.92%	2.87%	0.35%	3.88%	0.00%	9.53%	7.22%	4.13%
Pakpattan	35.41%	10.12%	1.12%	14.25%	2.18%	2.47%	0.49%	1.50%	3.24%	0.77%	5.74%	0.15%	10.62%	7.82%	4.13%
Peshawar	32.16%	12.85%	1.82%	17.95%	3.18%	1.75%	1.92%	2.25%	2.61%	0.36%	3.72%	2.73%	6.18%	4.70%	5.84%
Pishin	27.41%	11.09%	2.12%	25.65%	3.43%	3.08%	2.87%	3.90%	1.03%	0.62%	5.58%	1.60%	5.35%	2.71%	3.55%
Quetta	33.30%	10.46%	3.87%	25.35%	3.81%	3.36%	0.73%	2.32%	1.20%	0.46%	3.32%	2.34%	1.75%	3.72%	4.01%
Rahim Yar Khan	29.92%	12.86%	2.85%	20.35%	2.08%	1.32%	1.31%	1.47%	3.19%	1.33%	5.12%	0.25%	9.05%	6.48%	2.43%
Rajanpur	28.39%	12.51%	3.35%	18.13%	1.33%	1.33%	1.40%	2.70%	2.33%	3.39%	6.10%	2.08%	8.52%	6.71%	1.73%
Rawalpindi	32.61%	10.41%	1.86%	17.17%	3.33%	0.64%	2.81%	1.02%	2.21%	0.49%	4.10%	4.58%	7.61%	4.86%	6.30%
Sahiwal	33.32%	10.88%	0.58%	19.28%	2.00%	1.52%	0.10%	0.46%	2.98%	1.49%	5.77%	0.00%	10.34%	6.85%	4.43%
Sanghar	26.99%	10.54%	2.54%	24.00%	1.26%	1.13%	0.83%	2.66%	2.80%	1.11%	5.59%	0.24%	7.88%	6.83%	5.60%
Sarghodha	31.43%	5.80%	0.88%	28.69%	1.53%	1.62%	0.92%	0.66%	2.26%	0.79%	4.58%	0.30%	9.18%	6.06%	5.32%
Shangla	29.37%	13.03%	4.38%	16.26%	2.66%	1.54%	2.93%	0.06%	1.55%	0.26%	3.37%	5.41%	8.72%	7.88%	2.59%
Sheikhupura	34.74%	9.02%	3.07%	18.29%	1.91%	1.47%	0.56%	0.19%	3.40%	0.42%	1.87%	0.21%	8.87%	8.14%	7.84%
Sherani	28.18%	9.38%	1.19%	20.75%	0.24%	0.42%	0.00%	1.59%	1.71%	2.61%	6.52%	7.04%	8.16%	7.46%	4.74%
Shikarpur	29.10%	14.22%	3.58%	12.68%	3.08%	2.10%	2.87%	2.64%	3.62%	0.26%	5.61%	0.00%	8.07%	7.44%	4.74%
Sialkot	24.06%	6.14%	1.54%	34.05%	2.65%	3.87%	0.65%	0.00%	3.18%	0.13%	1.52%	0.00%	8.77%	5.38%	8.07%
Sibi	27.87%	13.63%	3.88%	11.45%	1.86%	1.88%	1.41%	3.99%	1.75%	3.79%	6.40%	5.69%	7.27%	6.20%	2.93%
Sujawal	29.00%	9.00%	3.24%	11.02%	1.28%	0.71%	1.88%	3.47%	2.80%	4.96%	8.14%	3.29%	8.43%	7.85%	4.92%
Sukkur	32.34%	17.18%	3.78%	6.11%	3.39%	1.69%	3.18%	2.76%	4.26%	0.58%	5.80%	0.56%	8.07%	6.93%	3.36%
Swabi	31.44%	7.11%	2.22%	25.97%	0.59%	1.08%	1.12%	1.23%	1.62%	0.16%	2.63%	3.78%	9.43%	5.33%	6.30%
Swat	27.94%	7.71%	2.22%	26.91%	2.16%	1.54%	2.14%	0.18%	1.84%	0.17%	2.50%	3.60%	9.61%	6.93%	4.54%
T.T. Singh	34.80%	8.22%	1.41%	19.45%	1.94%	1.67%	2.74%	0.72%	2.92%	0.38%	4.71%	0.16%	9.79%	7.66%	3.43%
Tando Allahyar	28.66%	12.15%	2.02%	19.32%	1.45%	1.82%	1.25%	2.57%	3.02%	0.64%	7.20%	0.11%	6.30%	7.45%	6.05%
Tando Muhammad Khan	26.81%	11.39%	2.23%	19.79%	1.77%	1.76%	1.11%	3.05%	2.73%	1.75%	6.17%	0.30%	7.75%	7.64%	5.75%
Tank	26.21%	14.35%	3.26%	15.65%	3.74%	2.67%	2.11%	3.65%	2.15%	0.46%	6.03%	4.48%	8.72%	3.61%	2.91%

District	Education			Health				Standard of Living							
	Years of schooling	School Attendance	Educational quality	Access to health facilities	Full immunisation	Ante-natal care	Assisted delivery	Improved walls	Overcrowding	Electricity	Sanitation	Water	Cooking Fuel	Assets	Land & Livestock
Tharparkar	27.41%	9.13%	2.24%	11.59%	1.85%	1.60%	2.97%	3.33%	1.08%	5.63%	7.92%	7.02%	8.61%	8.22%	1.40%
Thatta	27.66%	8.24%	2.79%	16.19%	1.10%	0.98%	1.60%	2.86%	2.82%	3.81%	7.66%	3.43%	8.35%	7.52%	5.00%
Torgarh	26.12%	10.60%	3.01%	20.64%	2.73%	3.27%	3.29%	0.08%	1.21%	2.94%	5.09%	3.46%	7.66%	7.22%	2.67%
Umerkot	26.33%	9.76%	2.21%	19.02%	1.36%	2.27%	2.60%	3.19%	2.06%	3.07%	6.51%	3.63%	7.97%	7.09%	2.95%
Upper Dir	25.17%	10.71%	5.29%	20.92%	2.02%	2.93%	3.39%	0.00%	2.26%	1.24%	3.37%	5.80%	8.21%	6.85%	1.84%
Vehari	33.39%	9.67%	1.96%	17.55%	2.33%	1.41%	1.04%	1.41%	2.74%	1.68%	5.77%	0.05%	9.39%	7.50%	4.11%
Washuk	27.05%	12.40%	2.18%	12.99%	2.45%	1.84%	1.43%	3.21%	1.63%	4.39%	8.32%	4.19%	8.23%	5.23%	4.47%
Zhob	25.72%	11.74%	5.56%	24.40%	1.45%	1.74%	2.46%	2.50%	0.16%	0.97%	4.35%	5.84%	7.22%	3.76%	2.14%

Annex V - Glossary

The ICA refers to a number of natural shocks relevant to the context of Pakistan. Below is a glossary defining the aforementioned shocks and the various types of each phenomena that may exist (definitions provided by NDMA):

Drought

Drought is a deficiency in precipitation over an extended period, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people. It is a normal, recurrent feature of climate that occurs in virtually all climate zones, from very wet to very dry.

Earthquake

Earthquake is defined as shaking and vibration at the surface of the earth resulting from underground movement along a fault plane of from volcanic activity or due to movement of plate boundaries of the Earth. The scale of earthquakes is measured by moment magnitude and the shaking intensity at each location is usually reported by Mercalli intensity scale.

Food Security

Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (The State of Food Insecurity in the World 2001.FAO 2002, Rome).

Flood

- Riverine Flood

  Riverine (or fluvial) flooding is a phenomenon of inundation caused by water overflowing from a river beyond its ordinary boundary (riverbank).

- Flash Flood

  A flash flood is a phenomenon of rapid flooding (mostly less than 6 hours) of geomorphic low-lying areas due to downpour or heavy rains caused by low depression, climate front line (thunderstorm) or cyclone.

- Urban Flood

  Flood and inundation phenomena occurring in the city or built-up areas.

The ICA Flood layer considers both Riverine and Flash Floods. It does not include GLOF (see below), which is considered separately as a lens.

GLOF

"GLOF" refers to a Glacial Lake Outburst Flood that occurs when water in a glacial lake suddenly discharges due to a breach of a moraine dam (Glacial Lake). The results can be catastrophic to the downstream riparian area. (Richardson and Reynolds 2000). Gilgit Baltistan (GB) has suffered from threats of "GLOF" and the threat has increased due to the impacts of climate change.

Landslide

Landslides are a phenomenon when the ground slides after it has been saturated from water such as rain. Once a landslide occurs, it widely damages the area including houses and fields and causes traffic problems. The ground could slide several meters more even if it usually slides invisibly. If the landslide breaks a dam at a river, it can bring huge damage to the lower area.

PAKISTAN
National Disaster Management Authority
NDMA

WFP
World Food Programme
wfp.org

FAO
FIAT PANIS

PAKISTAN METEOROLOGICAL DEPARTMENT

PAKISTAN BUREAU OF STATISTICS
Government of Pakistan

SPACE & UPPER ATMOSPHERE RESEARCH COMMISSION
PAKISTAN
SUPARCO