EL NIÑO / LA NIÑA IMPACT ON INDONESIA:

SCENARIOS

Possible developments in Indonesia over the next 10 months (to end 2016)

04 March 2016

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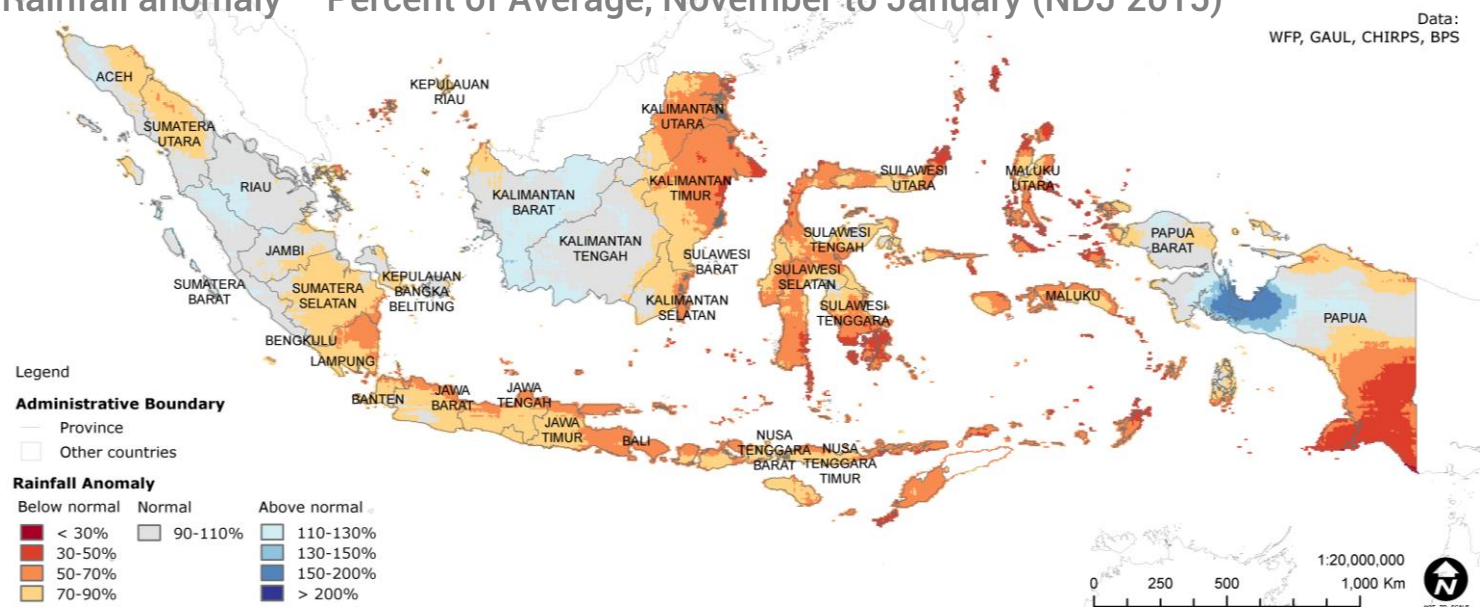
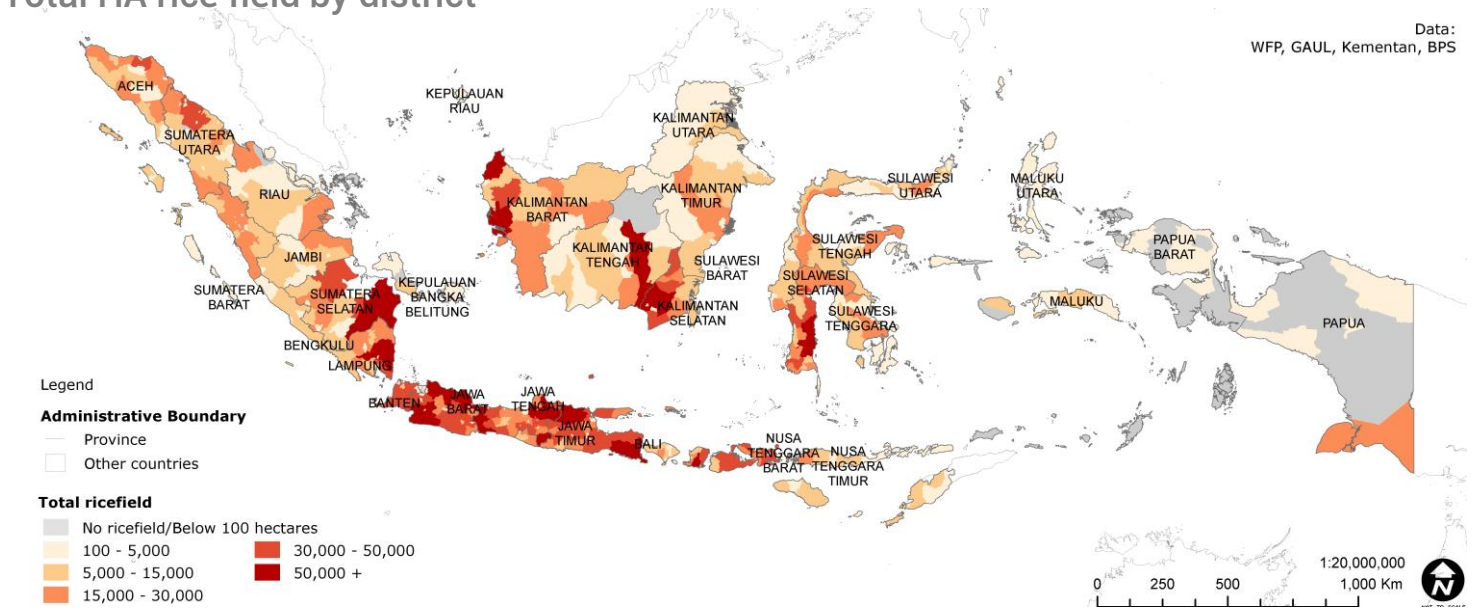
Situation Map

Rainfall anomaly – Percent of Average, November to January (NDJ 2015)



Total HA rice field by district



Late onset of the monsoon season caused by El Niño (or ENSO, the El Niño Southern Oscillation) resulted in a late onset of the monsoon season. This reduced rainfall delayed rice planting of the first season harvest. Around 25% of the national total had not been planted by the end of December 2015 predominantly in Java, Sulawesi, and eastern Indonesia.

An estimated 3 million Indonesians live below the poverty line in areas that were severely impacted by drought between October and December 2016[1], 1.2 million of whom are reliant on rainfall for their food production and livelihoods. (MoA, LAPAN, FAO, WFP 01/2016)

INTRODUCTION

CURRENT SITUATION

The current El Niño started to affect Indonesia in March 2015, reaching strong El Niño levels by July before peaking in December 2015. It has remained strong in early 2016 but is now expected to weaken, returning to neutral phase by July. Whilst the intensity is comparable to the 1997/98 El Niño it has been slower in onset and lasted longer. In 2015, El Niño effects included reduced rainfall, especially in Central and South Kalimantan, southern Sumatra, Java, Sulawesi and Papua; reduced the third harvest in some areas; and intensified seasonal fires in Central and South Kalimantan, southern Sumatra, Java, Sulawesi and southern Papua. These fires burned uncontrolled throughout September and October, blanketing Indonesia in dangerous levels of smoke for several weeks and affecting palm oil and rubber production. (OCHA 05/10/2015, FAO 02/02/2016, WHO 20/10/2015,)

This reduced rainfall has reduced soil moisture content in many areas at the start of planting for 2016's first (main) harvest season and particularly delayed rice planting: around 25% of the national total had not been planted by the end of December 2015 predominantly in Java, Sulawesi, and eastern Indonesia (FAO 02/02/2016). The result is an anticipated delay of at least 25% of the main rice harvest by two months, to April 2016.

Localised reduced yields in 2015 and the delay in harvest of the current, first cycle due to El Niño has resulted in poorer households adopting negative coping strategies (loans, selling of assets etc.) and being less able to withstand future shocks. It is estimated that between 3 million Indonesians live below the poverty line in areas that have been severely impacted by drought[1], 1.2 million of whom rely on rainfall for their food production and livelihoods. (MoA, LAPAN, WFP 10/2015, WFP 28/01/2016, UN Focus Group on El Nino 02/2016). Meanwhile the market price of rice is at a record high: as at February 2016 it is around 9 % higher than usual and expected to continue to rise gradually, as usual, until the first harvest. (MoA, LAPAN, FAO, WFP 01/2016)

The Government of Indonesia (GoI) has an on-going programme of drought mitigation measures such as the improvement of irrigation channels, new reservoirs and wells, and water pumps for distribution. The GoI has also allocated IDR 3.5 trillion (USD 258 million) to improve rice state reserves and stabilise the prices of staple foods. Rice imports totalling 1.5 million tonnes were authorised, with expected delivery by March 2016. Several local authorities declared drought-related states of emergency[2] although most have now ended. Meanwhile some local authorities are dealing with flooding. (MoA, LAPAN, FAO, WFP 01/2016)

PROBLEM STATEMENT

Whilst Indonesia has strong capacity and expertise for responding to rapid-onset emergencies, it is far more challenging to respond to slow-onset emergencies. El Niño has already had a significant effect on national rice production and, together with a possible La Niña, has the potential to impact food security throughout 2016.

There is an urgent need to improve the collective monitoring of the situation to adequately prepare for possible increased humanitarian need and longer-term rise in poverty levels.

SCENARIOS FOR MARCH – DECEMBER 2016

The scenarios within this document are not attempts to predict the future. Rather they are a description of situations that **could** occur in the coming 10 months, designed to highlight the possible impacts, and resulting humanitarian consequences, of El Niño and La Niña in 2016.[3] It is intended that they be used to:

- Support planning by anticipating needs and related interventions;
- Provide a framework for improved monitoring and surveillance systems; and
- Create awareness, provide early warning, and promote preparedness activities among stakeholders.

While the scenarios consider possible developments from March until the end of 2016, any impact on access to basic needs will likely be felt by households as of July and the and extend beyond 2016.

HOW TO USE THIS DOCUMENT

The four scenarios developed are summarised on page 5. On pages 6 and 7 is a list of possible trigger events that, should they occur, will lead towards the situations described in the scenarios. Pages 8 to 11 give more detail on the scenarios including recommended actions that can be taken to mitigate the impact of the scenario and/or minimise the humanitarian consequences should the scenario materialise.

[1] , based on days without rain and percentage below the poverty line. (WFP 25/01/2016, WFP 28/01/2016)
[2] West Java, Gorontalo, South Sulawesi, Bengkulu, Central Java, East Java, West Papua, Papua, NTB, NTT, DI Yogyakarta, Lampung, Banten, Sulawesi Tenggara, North Sulawesi, Central Sulawesi, North Maluku

[3] See the methodology section for more information on how these scenarios were developed.

OVERALL ASSUMPTIONS

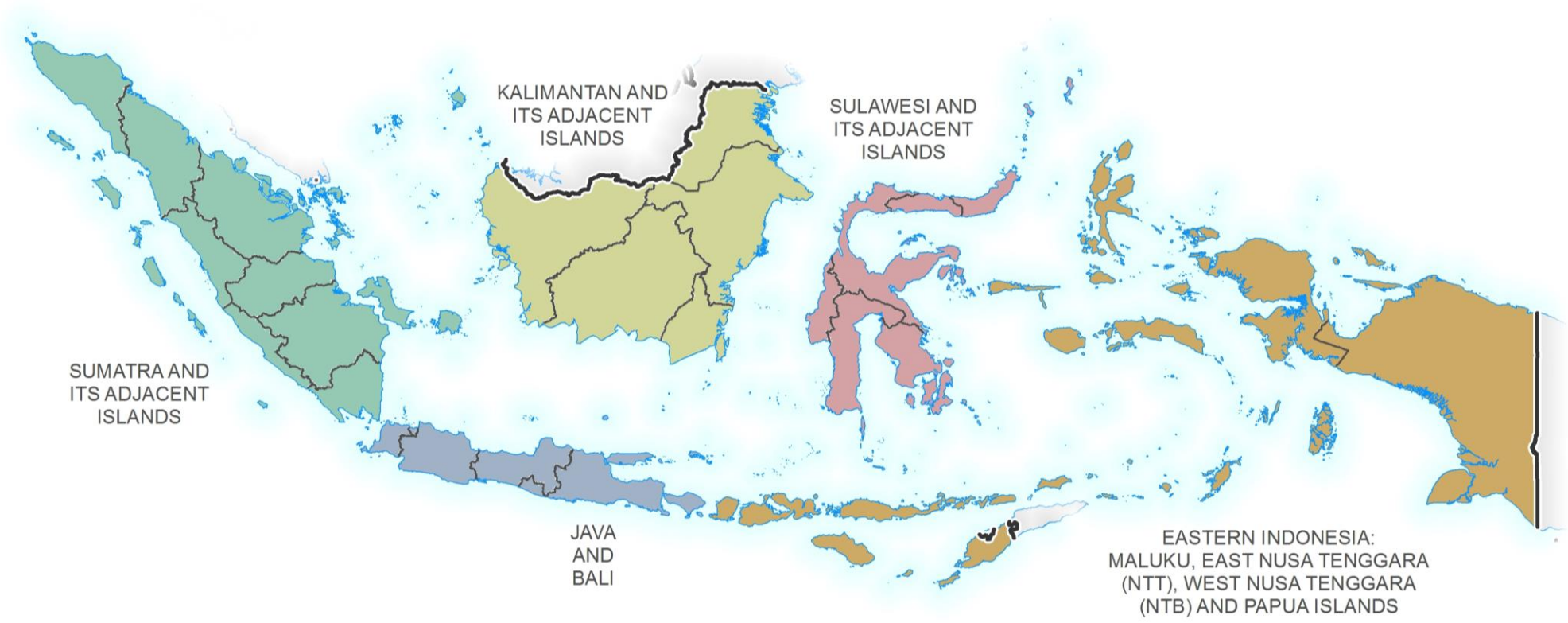
For all the scenarios, it is assumed there will be:

- Only a slight reduction in the first (main) harvest for 2016 at a national level, although there will be significant reductions in yield in some localised areas.
- Delayed planting of the second crop cycle in at least 25% of rice areas, mainly eastern Indonesia.
- Some switching of crops (e.g. from rice to maize) in areas that continue to receive below average rainfall.
- Good national and regional response capacity except to remote areas (islands / some eastern areas).

Furthermore, the effects of El Niño have already caused a significant number of households to lose income and adopt negative coping mechanisms. As a result, affected households are less able to cope with the impact of possible additional shocks.

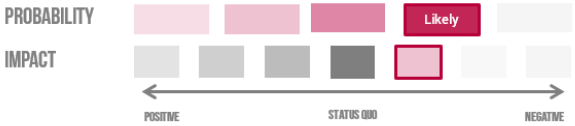
GEOGRAPHY

Indonesia comprises many different islands spread across a wide area. Consequently the climate in one area can be significantly different to that in another. Even within islands microclimates exist. These scenarios refer to the different regions as shown on the map below but it should be remembered that within any regions there are wide variations in geography, climate, agricultural practices, employment, wealth and living standards.



SUMMARY

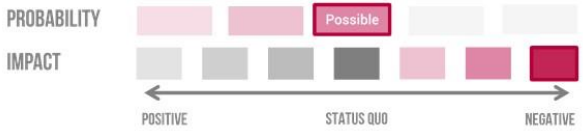
Scenario 1: Second crop harvest - delayed



Duration of crisis — July to October 2016

Overview: Late planting of the first season crops results in a delayed second season harvest, pushing the peak of the harvest season from August to October 2016 in Java and eastern Indonesia. Despite the delay, the overall quantity of the second cycle harvest is normal. Between August and October, affected households living below or just above the poverty line face temporary difficulties in affording sufficient food and cope by decreasing consumption and reducing expenditure on other household needs.

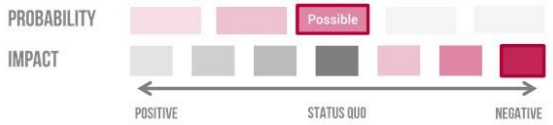
Scenario 2: Second crop harvest – delayed and reduced



Duration of crisis — July to first harvest 2017

Overview: Following a late and slightly reduced (by 10%) main harvest, the second harvest is also delayed, by one to two months, and reduced in more than 60% of rice-producing areas, including Java, Sulawesi and eastern Indonesia. Households facing delays are in need of support from July until the harvest of their crops in September or October. The impact of the water shortages and fires on agricultural yields, livestock production and other sources of income results in increased indebtedness and loss of assets significantly increasing the number of people falling below, or further below, the poverty line. Acute malnutrition in children under 5 worsens.

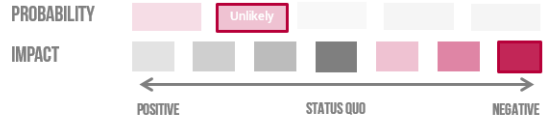
Scenario 3: La Niña disrupts main rural sources of income



Duration of crisis — September to first harvest 2017

Overview: In September, the onset of La Niña results in increased high tides, widespread flooding and landslides. La Niña related disasters coincide with a delayed second season harvest (see scenario 1 and 2), exposing the delayed crops to flooding and crop diseases in October. Small-scale maritime and inland aquaculture is disrupted. With most sources of income (temporarily) disrupted, rural households face extreme difficulties accessing sufficient food. Acute malnutrition in children under 5 worsens.

Scenario 4: Soaring rice prices



Duration of crisis — June to November 2016

Overview: The retail price for rice reaches unprecedented levels during the dry season, affecting household's ability to purchase food countrywide. Widespread social unrest follows. The GoI implements mechanisms to temper the price increases, including additional imports. However, due to an increase in global demand, the imports are delayed and costly. The price increases come at a time when household expenditure is especially high due to the need to purchase water (potable and/or for irrigation), start of school year expenses, and Ramadan and Eide. To meet these necessary expenditures, households engage in negative coping mechanisms such as taking out loans with high interest.

RECOMMENDATIONS: Participants in the scenario building workshop (see p 13) developed recommendations for each specific scenario. Four recommendations are relevant to all scenarios:

1) Increase flexibility and coverage of cash transfer and food assistance programmes.
2) Prioritise and accelerate planned and on-going improvements to water catchment and irrigation networks in drought-affected areas in eastern Indonesia.
3) Improve information sharing between government ministries and other key actors to prioritise on-going programming and re-allocate funding as necessary.
4) Develop methods to maximise community involvement in community-level resilience building.

TRIGGERS PER SCENARIO

Scenario or Compounding Factors application

Scenario 1 = Second crop harvest - delayed / Scenario 2 = Second crop harvest – delayed and reduced /
Scenario 3 = La Niña / Scenario 4 = Soaring market price o rice / Compounding Factors = CF

	1	2	3	4	CF	Background Information (as at February 2016)
The overall yield of second harvest will be normal if						
Rainfall during March-May is sufficient to provide soil moisture content for second-season planting						Soil moisture content for second season planting may not be sufficient if the monthly rainfall is < 100 mm/month or <50 mm/decade (10 day period)
A delay in planting and harvesting of second rice crops is minimised due to more favourable weather conditions & accelerated planting						
Sufficient and appropriate agricultural inputs are distributed in a timely manner	●					
La Niña does not materialise or its impact on weather patterns during September and October is not severe						There is 50% chance of an onset of the La Niña phenomenon in September or October 2016
There is sufficient water available for field irrigation						The irrigation should be >40% of total debit
There are no outbreaks of crop disease and pests						
The yield of second harvest will decrease if						
There is continued reduced rainfall during the March-May period which would have two effects: a. reduced water availability during planting would directly impact yields, and b. further delays to planting would cause harvesting to coincide with La Niña related disasters damaging crops.	●	●	●			It is likely that the second harvest season will be delayed, while there is 50% chance of an onset of the La Nina phenomenon in September or October 2016
Flooding by strong La Niña causes crop disease outbreaks and pests			●			
Timely information to farmers on weather forecasts is not provided, limiting their ability to adjust to planting of alternative crops.		●				
The supply of agricultural inputs is delayed, insufficient or inappropriate.		●				
Other major natural disasters occur, preventing timely harvest.		●		●		
Humanitarian capacities to respond will be inadequate if						
There is a major disaster in Jakarta or simultaneous disasters occur in other regions, overstretching GoI ability to respond to all affected areas					●	
There are insufficient contingency food and other stocks to respond to the scale of humanitarian impact			●		●	

There is lack of access to affected areas due to damaged infrastructures

A state of emergency is not declared in a timely manner in areas affected by slow or sudden onset disasters.

There is a lack of coordination between different line ministries

Timely information on the needs of communities, particularly in remote and difficult to access areas, is not available.

Market price of rice is likely to increase if

There is a significant decrease in the quantity of the first rice harvest resulting from reduced rainfall and substitution of paddy cultivation with alternative food crops

There is an anticipation of a delay or reduction in second harvest

There is increased demand on the global rice market due to global impact of El Niño

Import of rice is not carried out in a timely manner

Rumours of shortages of rice causes hoarding by wholesalers

Price stabilisation mechanisms are not implemented on time

A major natural disaster occurs, severely impacting the harvest and contingency stocks

Monthly average price of medium quality rice in February is around Rp 10,900 per kg

There is a slight reduction in the first season harvest – the full extent of the decrease will become known after harvest in April.

El Niño reduces yields in Asia negatively impacting the 2016 global outlook for rice crops.

Income from livelihoods other than crop cultivation will decrease if

El Niño induced drought affects inland water availability, impacting fresh water fish production

High tides and storms during La Niña causes damage to inland fishing infrastructure, disrupting small-scale fishing income and causes disruption to maritime fishing

Water shortages impact grazing lands resulting in a loss of livestock.

Loss of livestock due to La Niña related increase in natural disasters

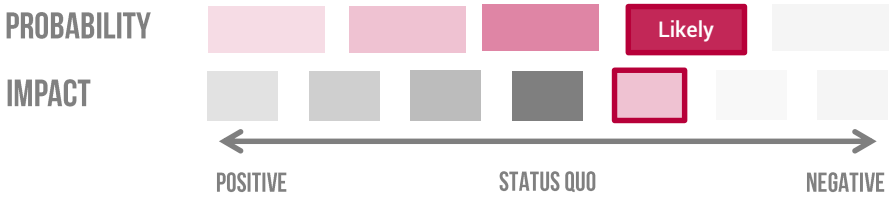
Communities lose assets and properties to flooding and other disasters

Sources: Columbia University 15/02/2016, Ministry of Trade 02/2016, FAO 04/02/2016

SCENARIOS

Scenario 1

Second crop harvest - delayed



Likely onset of humanitarian crisis: ***July***
Likely duration of humanitarian crisis if scenario materialises: ***4 months***

Possible triggers – if some or all of the following occur:

- More than 30% of the first harvest is delayed by two months or more; and/or
- There is no significant change in the expected rainfall and water availability via the irrigations system is up to 40% below normal in eastern Indonesia; and/or
- Insufficient information sharing on the weather patterns hampers the adoption of coping mechanisms by farmers, such as the planting of drought-resilient crops; and/or
- The supply of agricultural inputs is delayed, insufficient or inappropriate;

then the following scenario could result:

Description – Late planting of the first season crops (from October to December 2015) results in a delayed second season harvest, mainly in Java and eastern Indonesia. Despite the delay, the overall quantity of the second cycle harvest is normal. Yields are good in eastern Sumatra and Kalimantan and, although reduced elsewhere, there is only a slight reduction in the overall national harvest. The GoI continues to release rice to the market to minimise price fluctuations. The impact on a national level is therefore minimal. However, the households facing delays are in need of support from July until the harvest of their crops in September or October.

Geographic areas of most concern – Eastern Indonesia (Maluku, NTT, NTB and Papua islands) Sulawesi and Java.

Impact – Delayed second harvest, starting in August and peaking in October (one to two months later than usual), which results in a temporary reduction in household (HH) income and resources during July to September when HH would normally expect to harvest and when they also have increased expenditure associated with Ramadan, Eid, and the start of the school year. Increased expenditure on water, as HH in drought-affected areas need to purchase water for irrigation (and in some areas also for drinking) for longer than normal. Poorer communities adopt increased negative coping strategies until the second harvest while there seasonal unemployment increases and farmers and labourers temporarily migrate to urban centres in search of alternative work.

Humanitarian consequences – Households living below or just above the poverty line face temporary difficulties in affording sufficient food and cope by decreasing consumption and reducing expenditure on other household needs, including education and health care. In some cases they are pushed further into debt increasing the number of people falling below, or further below, the poverty line.

Estimated caseload – over 1.2 million (population dependent on rain fed agriculture and living below poverty line in areas affected by drought between October and December 2015).

Duration of need for additional support to affected households – 4 months: July – October 2016

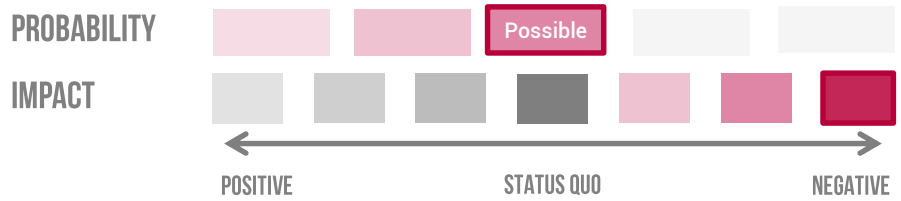
Recommended actions

- Accelerate planting in areas with sufficient infrastructure such as Java.
- Planned and on-going improvements to water catchment and irrigation networks are prioritised and accelerated in drought-affected areas in eastern Indonesia.
- Authorities prioritise improvement of information provision to farming communities regarding yield-maximising methods supported by timely delivery of appropriate agricultural inputs.
- Provide cash assistance for agricultural inputs
- Provide appropriate agricultural inputs (short-cycle seed varieties), and appropriate mechanisms to deliver the inputs.
- Strengthen social safety nets to prevent HHs falling further into debt.
- Monthly screening for acute malnutrition using MUAC/LILA (Mid Upper Arm Circumference / Lingkar Lengan Atas) at Posyandu Level[4].

[4] Posyandu: Pos Pelayanan Terpadu (integrated service post in Indonesian), is a clinic for children and pregnant women.

Scenario 2

Second crop harvest – delayed and reduced



Likely onset of humanitarian crisis: **July**
Likely duration of humanitarian crisis if scenario materialises: **6 months**

Possible triggers – if some or all of the following occur:

- Reduced rainfall in the rainy season results in reduced soil moisture content and water availability via the irrigation systems is at least 50% below normal. There is below-normal dry season rainfall; and/or
- More than 30% of the first harvest is delayed by two months or more, or the yield in eastern Indonesia is reduced by 50%; and/or
- GoI price stabilisation mechanisms temper price increases. Significant price increases would result in Scenario 4 occurring concurrently; and/or
- The supply of agricultural inputs is delayed, insufficient or inappropriate; and/or
- Some farmers are unable to change to drought-resilient crops in time;

then the following scenario could result:

Description – The El Niño effect continues to impact Indonesia: reduced soil moisture and reduced rainfall in some areas result in severe drought in at least half of eastern Indonesia. Following a late and slightly reduced (by 10%) main harvest, the second harvest is also delayed by one to two months and reduced in many rice-producing areas, including Java, Sulawesi and eastern Indonesia. Despite reasonable yields in eastern Sumatra and Kalimantan the overall national harvest is reduced by more than 20%. The GoI continues to release rice to the market to maintain prices. Localised livestock losses occur due to the impact of water shortages on grazing lands. There is a repeat of the 2015 uncontrolled fires resulting in severe haze in Kalimantan and Sumatra between August and October. There are major crop failures in Papua.

Geographic areas of most concern – Eastern Indonesia (Maluku, NTT, NTB and Papua islands) Kalimantan, Sulawesi, Sumatra and Java.

Impact – The delay and reduction in harvest and the selling (at reduced prices) or slaughtering (for domestic consumption) of livestock reduces HH income. Haze decreases palm oil and rubber production. There is an increased occurrence of landslides caused by soil degradation. Meanwhile there are localised steep increases in the market price of rice prior to delayed harvest in October. HH expenditure also increases due to haze related medical costs, purchase of water for drinking and/or irrigation and debt repayments. These significant reductions in income and increases in expenditure lead to the adoption of increasingly negative coping strategies, including increased selling of future crops. Third season planting is also delayed and in some areas abandoned.

Humanitarian consequences – The impact of the water shortages and fires on agricultural yields, livestock production and other sources of income results in increased indebtedness and loss of assets significantly increasing the number of people falling below, or further below, the poverty line. Reduced food consumption and expenditure on health care has a longer-term effect on malnutrition rates and acute malnutrition in children under five worsens. Seasonal unemployment increases, forcing farmers and casual labours to seek work in urban centres. There is an increase in haze-related health issues, particularly respiratory illnesses. The failure of food crops in Papua, in combination with the high levels of vulnerability, results in severe malnutrition and deaths.

Operational constraints – Landslides reduce access to remote communities. Fires, haze, landslides and the food security situation overstretch local response capacities.

Estimated caseload – Up to 7 million people; the majority of the rural population of affected areas who have insufficient alternative income sources.

Duration of need for additional support to affected households – 6 months: July – December 2016

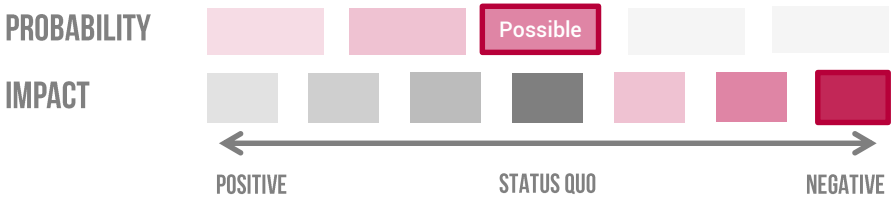
Recommended actions

In addition to those identified in Scenario 1:

- Expand social safety nets to include affected livestock holders and those affected by forest fires and landslides.
- Adopt drought-resilient agricultural practices.
- Adopt good fodder preservation and storage practices.

Scenario 3

La Niña disrupts main rural sources of income



Likely onset of humanitarian crisis: ***September***
Likely duration of humanitarian crisis if scenario materialises: ***6 months***

Possible triggers – if some or all of the following occur:

- Late planting of second season crops moves the peak harvest to October; and/or
- Above average rainfall (100mm or more per day) falls for five or more consecutive days between September and December; and/or
- Water management systems are unable to cope (e.g. lack of water pumps); and/or
- There are high tides and storms;

then the following scenario could result:

Description – In September, the onset of La Niña, the opposite phase of El Niño, results in increased high tides, heavy rains and storms, causing widespread flooding and landslides. The effects of the phenomenon disrupt all major rural sources of income and damage infrastructure. La Niña related disasters coincide with a delayed second season harvest, exposing the delayed crops to flooding and crop diseases in October. In areas where the water management infrastructure cannot cope with the additional rainfall, there is complete crop failure due to flooding. Small-scale maritime and inland aquaculture is disrupted. The disruption of main sources of income results in the adoption of extreme coping mechanisms by affected households. Vector and water-borne diseases spread.

Geographic areas of most concern – Most impacted are the provinces in southern Kalimantan, Sulawesi, north and west Sumatra, and eastern Indonesia – especially isolated communities. Ethnic groups dependent on oceans for fishing are particularly affected.

Impact – Flooding resulting from frequent torrential rains as well as crop pests and diseases cause damages and/or losses to rice and non-rice crops. Drought-resilient crops, planted because of El-Niño, are less able to deal with large amounts of rain and exacerbate the losses. In some areas, flood damage to storage facilities of crops already harvested results in further losses. The delayed second harvest triggers delayed planting of the following season's crop. Flooding severely damages inland fishing infrastructure. Small-scale maritime fishing is disrupted by high tides and strong winds, though large-scale fishing is less disrupted. Poorer communities reliant on small-scale agriculture and fishing suffer major loss of food and household income further increasing poverty levels. Some areas suffer weather related property damage. Access to clean potable water decreases.

Humanitarian consequences – With most sources of income temporarily disrupted, rural households face extreme difficulties accessing sufficient food. Communities' capacity to cope with the shocks is reduced because a multitude of income sources have suffered impacts. Temporary loss of livelihoods, possibly exacerbated by loss or damage to property, and increased negative coping strategies push poorer communities further into poverty. Flooding causes temporary small-scale displacement, increasing the vulnerability of affected communities. Acute malnutrition in children under 5 worsens, and the overall nutritional status of the population below or just above the poverty line further deteriorates. Waterborne diseases such as diarrhoea and skin diseases appear and localised outbreaks of malaria and dengue fever occur.

Operational constraints – Lacking timely information on weather forecasts, fisherman are unable to adapt to the changing weather. Flooding and landslides disrupt logistics and supply chains. Regional disaster response capacities are overstretched.

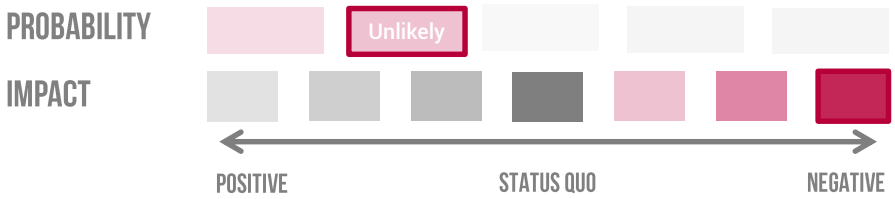
Estimated caseload – At least 3 million people, those living in areas affected by floods / landslides or dependent on small-scale maritime fishing, will be severely affected and in need of immediate support.

Duration of need for support – 6 months for emergency assistance, September 2016 – February 2017; longer for recovery and livelihoods support.

Recommended actions

- Increase flexibility and coverage of cash transfer and food assistance programmes.
- Preposition additional stocks in areas likely to be hard to reach.
- Improve security of warehousing facilities in flood-prone areas.
- Expand the Climate Field School for Maritime Community, educating fisherman on understanding meteorological signs and information. Improve dissemination of timely meteorological information.

Scenario 4
Soaring market price of rice



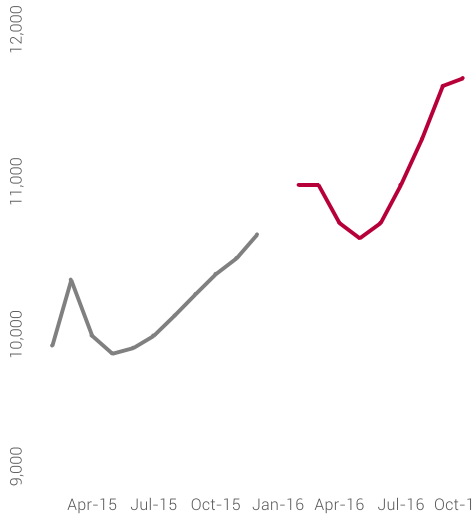
Likely onset of humanitarian crisis: ***June***
Likely duration of humanitarian crisis if scenario materialises: ***6 months***

Possible Triggers – if some or all of the following occur:

- A significant decrease in quantity of first rice harvest due to reduced rainfall and substitution of paddy cultivation with drought-tolerant crops such as maize; and/or
- Anticipation of delay or reduction in second harvest; and/or
- Rumours of additional shortages resulting in hoarding by wholesalers; and/or
- Delayed decision to implement price stabilisation mechanisms; and/or
- Increased demand on the global rice market, due the impact of El Niño conditions on rice harvest in the region; and/or
- Inability to import sufficient rice in a timely manner;

then the following scenario could result:

Description – Over the dry season the retail price for rice reaches unprecedented levels, affecting HH's ability to purchase food countrywide. Despite a fall in rice price following the delayed harvest in April, expected and actual harvest shortages in the second harvest, combined with the usual temporary inflation caused by Ramadan/Eid, push the price upward to a peak in October. The GoI implements mechanisms to temper the price increases, including additional imports. However, due to an increase in global demand, the imports are delayed and come at significant cost. The price increase, which is significant from June until October, is at the time when HH income from agriculture is at its lowest and expenditure, including for schooling and Ramadan/Eid, is greatest. Poorer HHs are forced to adopt severe negative coping mechanisms, including selling assets and taking out high interest loans.



Geographic areas of most concern – The price increases affect the whole of Indonesia. However, areas with a large proportion of traditionally poorer households are disproportionally affected. This includes the provinces of Papua, Papua Barat, Maluku, NTT, Sumatera Utara, Sumatera Barat and Riau.

Humanitarian consequences – HHs living below or just above the poverty line face extreme difficulties in affording sufficient food and cope by decreasing consumption and reducing expenditure on other HH needs, including education and healthcare. The nutrition status of children under 5 deteriorates. The price increases come at a time when household expenditure is particularly high, and includes the need to purchase water (potable and/or for irrigation), and costs associated with the start of school year, as well as Ramadan and Eid. To meet these necessary expenditures, HH engage in negative coping mechanisms such as taking out loans with high interest and selling productive assets. This results in a longer-term rise in poverty levels and an increasing poverty gap. Any delays or reduction in 2016 harvest yields reduces repayment ability pushing households deeper into poverty. The urban poor, who have fewer coping mechanisms, are especially affected.

Estimated caseload –11% of the population, all those categorised as 'living below the poverty line' in 2015 are in need of additional support. Other vulnerable groups (an additional 30% of the population) are at increased risk of falling into poverty and are subsequently in need.

Recommended actions

- Additional price stabilisation mechanisms at farmer and retail level, including timely facilitation of rice imports and increasing buffer stocks at the village level
- Increase flexibility and coverage of cash transfer and food assistance programmes.
- Provision of appropriate agricultural inputs for second crop cycle
- Adaptation of the mechanism for the provision of agricultural inputs.

COMPOUNDING FACTORS

The following developments can occur in parallel to any of the above scenarios and have the potential to significantly change the humanitarian situation.

- ## NATIONAL RESPONSE CAPACITY

  There are several, unlikely but not impossible, developments that could significantly reduce the national response capacity. The obvious example is a large-scale disaster in Jakarta, including an earthquake, tsunami or heavy flooding, disrupting the functioning of GoI institutions, including BNPB. Although the decentralisation of decision-making means that district authorities have a certain capacity to respond to localised crisis, the impacts of Scenarios 2 to 4 demand significant additional support from national level response institutions. Other possible developments that would result in an unavailability of national support on a local level include a financial crisis, political upheaval or the diversion of national resources due to a large-scale disaster outside of Jakarta.

- ## COMMUNICABLE DISEASES

  Indonesia continues to face outbreaks of endemic infectious diseases including malaria, measles, dengue fever, diarrhoea, chikungunya, rabies and leptospirosis. Cases of the highly pathogenic avian influenza (HPAI) H5N1 in humans continue to be reported (IFRC 2015). Indonesia's DPT immunisation rate is 85%, compared to 94% in neighbouring Philippines. A large-scale disease outbreak is particularly of concern in Scenario 3 'La Niña', during which water sources are contaminated and localised displacement occurs In addition to increased morbidity and mortality. An outbreak results in additional healthcare costs at the HH and national / local authority levels. (Centre for Excellence in Disaster Management and Humanitarian Assistance 23/07/2015).

- ## CROP DISEASE AND PESTS

  The impact of El Niño and La Niña on crop harvest will be exacerbated if there is a significant outbreak of crop diseases and pests. The risk of such an outbreak is heightened during the La Niña scenario, with most diseases and pests developing during the rainy season, while the impact of La Niña on response capacity and households limits the implementation of mitigation measures. The humanitarian consequences of Scenarios 1, 2 and 3 will be more severe in case of a localised outbreak, with households facing additional obstacles to access sufficient income.

- ## REGIONAL OR GLOBAL FINANCIAL ENVIRONMENT

  Indonesia is highly dependent on foreign capital inflows (Economist 16/09/2016, Rabobank 18/02/2016). A sudden halt in capital flows, similarly to what happened during the 1997 financial crisis when significant amounts of foreign currency were withdrawn from the Indonesian market, will therefore have major implications. Such a financial crisis will have a direct impact on the ability of GoI to fund social protection schemes, infrastructure development projects and rice imports. Impact on households will be manifold, depending on the character of the financial crisis. A significant increase in urban unemployment is one major impact, as corporations will have difficulties accessing foreign lending for financing.

- ## FLASH FLOODS AND LANDSLIDES

  Flash flooding and landslides are a frequent occurrence during the rainy season in many parts of Indonesia. The 2007 floods in Jakarta for example inundated 75% of the city and displaced an estimated 500,000 people (IFRC 28/06/2013, Dartmouth Flood Observatory 2007 Registry)

  The large majority of recent flooding disasters in Java occurred in the month of February. However, with the delayed start of the monsoon season, the peak daily average rainfall, and possible floods, could be delayed to March. Most areas in Indonesia are at risk of landslides due to flooding, earthquakes and volcanic activity. Northern Sumatra, northern Kalimantan, southern Java and Papua are most at risk. (Center for Excellence in Disaster Management and Humanitarian Assistance 06/2015)

  Therefore, even though the El Niño effect may significantly reduce rainfall overall, sudden localised downpours can be expected. The local impact of such events can be devastating and would compound the humanitarian consequences of Scenarios 1 or 2.

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How scenarios can be used

PURPOSE OF SCENARIO BUILDING

Scenarios are a set of different ways in which a situation may develop. The aim of scenario building is not to try and accurately predict the future but rather to understand the range of possible futures and then select a few that result in distinct situations with, usually, differing humanitarian outcomes that can:

- Support strategic planning for agencies and NGOs.
- Identify assumptions underlying anticipated needs and related interventions.
- Enhance the adaptability and design of detailed assessments.
- Influence monitoring and surveillance systems.
- Create awareness, provide early warning, and promote preparedness activities among stakeholders.

For more information on how to build scenarios, please see the ACAPS Technical Brief on Scenario Development

Methodology

The scenarios were developed during a two-day workshop in Jakarta involving 21 organisations. Initially a list of events (or drivers) that might significantly change the humanitarian landscape was identified. There are five main factors affecting the future food security situation in Indonesia:

- The weather
- The quality and quantity of harvest
- Water management
- Response capacity
- Market price of rice

Different combinations of these triggers were selected and four plausible scenarios developed, identifying the major impacts of each scenario and resultant humanitarian consequences. A number of compounding factors that could affect more than one of the scenarios were also identified and their effects considered separately (see page 9).

A list of individual triggers for each scenario is given on pages 6 and 7. It should be noted that a combination, but not necessarily all, of the triggers are required to realise a scenario The caseload numbers for Scenarios 2 and 3 are based on Indonesia's National Disaster Risk Index 2013 (highest disaster risk scale 31 -36).[5] The caseload numbers are dynamic and will be monitored and modified based on field reports and InaSAFE software for disaster risk.[6]

While the scenarios consider possible developments from March until the end of 2016, any impact on access to basic needs will likely be felt by households as of July and the and extend beyond 2016.

Staff from the following 26 organisations participated in one or more of the workshops: Asian Development Bank, BAPPENAS, Bogor Agricultural University (IPB), Bulog, Caritas Indonesia, Dompet Dhuafa (representing the National Platform for Disaster Risk Reduction), FAO, IFRC, Indonesian Red Cross (Palang Merah Indonesia - PMI), Mercy Corps, Ministry of Agriculture (Food Security Agency, International Cooperation and Food Crops Directorates), Ministry of Health, Ministry of Public Works, Ministry of Social Affairs, Ministry of Trade, Ministry of Village Development, National Bureau of Statistics (BPS), National Meteorology Bureau (BMKG), OCHA, Presidents Office, Save the Children (representing Emergency Capacity Building - ECB), UNDP, UNICEF, WFP, WHO, World Bank.

LIMITATIONS

Scenarios can seem to oversimplify an issue, as the analysis balances details with broader assumptions. Scenario-building is not an end in itself. It is a process for generating new ideas that should in turn lead to actual changes in project design or decision-making.

For these scenarios to be of use, they should form the basis for improved information sharing to inform a collective understanding of the actual and potential situation and humanitarian needs.

THANK YOU

ACAPS would like to thank all organisations that provided input to these scenarios, especially those who attended the workshop in Jakarta. For additional information, comments or questions, please email analysis@acaps.org

[5] BNPB (2013) Indonesia's National Disaster Risk Index

[6] InaSAFE is free software that was developed jointly by Indonesia (BNPB), Australia (Australian Government) and the World Bank (GFDRR)