15 September 2011 -Regional La Niña Update-Pacific
Produced by the Red Cross/Red Crescent Climate Centre and the International Research Institute for Climate and Society

About the Update
La Niña conditions re-generated in early August, and weak La Niña conditions or neutral conditions are the most likely outcome for October – December 2011. The expected La Nina conditions are notably weaker than the moderate to strong La Niña event that persisted from June 2010 to May 2011. There is virtually no chance that El Niño conditions will develop during this time.

This document contains updated information on the regional impacts of the current weak La Niña, based on the September 15th update of IRI’s seasonal forecast for October – December 2011. In some regions, unusual rainfall patterns related to this La Niña event are forecast. It is recommended to continue monitoring seasonal forecasts on a monthly basis for updates as it becomes clearer whether the weak La Niña conditions are likely to intensify, and how long they are likely to persist. IRI’s next forecast update is scheduled for 20 October 2011 and can be found at: http://iri.columbia.edu/ifrc/forecast/3munusualprecip

This update contains:
- IRI’s global forecast map
- A regional update specifically for the Pacific.
- Background information on La Niña, as well as forecast monitoring guidance and resources.
Global Forecast Map
The map below shows the IRI forecast for the total amount of rainfall that is expected from October to December 2011. The map shows whether this three-month period as a whole is expected to be unusually wet or dry.

Global Forecast Map: IRI Seasonal Forecast for Precipitation (rain and snow) over October – December 2011, issued on 15 September 2011.

How to read this forecast map: Colours over the map correspond to how confident we can be that the total amount of rainfall over the period October-December 2011 will be either above-normal (i.e., unusually wet, indicated by shades of blue) or below-normal (i.e., unusually dry, indicated by shades of yellow) for the given area and time of year. Above-normal and below-normal rainfall typically each occur about once every three years (i.e., with a probability of 33%), and so shaded areas indicate increased risks of an unusually wet or dry season. Areas with higher confidence levels have darker shades (see colour bar above). For more guidance on interpreting the forecast, see page 5.

Note: The forecasts are not a direct indication of flooding risks because floods can occur as a result of exceptionally heavy rainfall over only a few hours or a few days, and because prolonged "good" rains over a three-month period may not produce any flooding at all. However, the map does provide a reasonably good indication of areas that might be at increased risk.

Pacific Regional La Niña update (15 September 2011)
Increased risk of Pacific Island floods and droughts
The moderate to strong La Niña event that persisted from June 2010 to May 2011 weakened to neutral conditions over the following few months but re-strengthened in early August so that weak La Niña
conditions have now regenerated. For the months of September-November, weak La Niña conditions or neutral conditions are likely; there is virtually no chance that El Niño conditions will develop during this time. It is recommended to continue monitoring seasonal forecasts on a monthly basis for updates as it becomes clearer whether the weak La Niña conditions are likely to intensify, and how long they are likely to persist.

Some islands in the Pacific tend to experience drought during La Niña events, while others experience above-normal rainfall. Droughts in Fiji, Solomon Islands, Micronesia and Kiribati all coincided with the La Niña that persisted from 1998-2001. Due to limited water resources, droughts affecting Pacific Islands can have implications on food security, water and sanitation, health and livelihoods.

For October - December 2011 IRI forecasts show substantially increased chances of above-normal rainfall for parts of:
- Australia (northern and western)
- Cook Islands (South)
- New Caledonia
- Niue
- Papua New Guinea
- Tonga

The risk of flooding for these island nations is therefore increased.

For October – December IRI forecasts show substantially increased chances of below-normal rainfall for:
- Kiribati (main and east)
- Nauru
- Tuvalu

The risk of drought for these island nations is therefore increased.

**Pacific Forecast Map**: IRI Seasonal Forecast for Precipitation (rain and snow) in the Pacific over October - December 2011, issued on 15 September 2011.
Continued monitoring required
Given the notably increased risk of heavy rains in parts of Australia, the Cook Islands, New Caledonia, Niue, Papua New Guinea and Tonga, we strongly recommend making contact with national met service and monitoring weather forecasts on shorter timescales over the course of the season to anticipate the specifics in terms of where, when and how severe rainfall events might be. You may also want to consider advanced planning for implications of above-normal rainfall on disaster management, health, WATSAN and livelihoods for instance (see background information below for further guidance).

Given the notably increased risk of drought on Kiribati, Nauru and Tuvalu, we strongly recommend monitoring for any emerging drought conditions that would activate your regional drought contingency plans. You might also consider some pre-emptive actions such as hand washing campaigns, water conservation etc as appropriate in country.

In addition, IRI updates its seasonal forecasts on a monthly basis (next update: 20 October). We recommend monitoring the forecasts as they are updated on a monthly basis for any developments: [http://iri.columbia.edu/ifrc/forecast/3munusualprecip](http://iri.columbia.edu/ifrc/forecast/3munusualprecip) and we strongly recommend contacting national meteorological services and regional climate centres for more detailed forecasts (see page 6 for some regional monitoring resources). For further information about La Niña, and guidance on monitoring and enhancing preparedness using forecasts across timescales, see the attached background document. If you have questions related to this La Niña or seasonal forecasts, you can e-mail the IFRC Helpdesk at IRI: ifrc@iri.columbia.edu.

Background and Forecast Monitoring Information

What is La Niña and why does it matter?
La Niña is a natural part of climate variability, and refers to a colder than average period in the equatorial Pacific (the opposite of warm El Niño events). In the last 20 years, we have experienced 4 moderate to strong La Niña events (1995-96, 1998-2000, 2007-08, 2010-2011). While La Niña can go unnoticed or even have beneficial impacts in many parts of the world, it can also be disruptive or cause extensive problems when some areas receive too much or too little rainfall.

For example, unusually heavy rainfall in Southern Africa that often accompanies La Niña events, caused devastating floods and mudslides during the 1998-2000 La Niña that resulted in deaths, injuries and left thousands homeless. In Bangladesh, 4 out of the 6 most catastrophic flood years since 1954 have occurred during La Niña events. On many Pacific Islands, La Niña is frequently accompanied by drought, putting major stress on the limited availability of fresh water resources. Recent flooding in Pakistan and West Africa can in part be attributed to La Niña conditions that began to develop this June. La Niña is also associated with increased hurricane activity in the Atlantic, and can cause the path of typhoons in the western Pacific to shift more towards mainland Asia.

Once developed, La Niña events typically persist for about a year (occasionally longer), peaking during the October - January period. However, the largest impacts for a location may not coincide with the peak of the La Niña itself. Peak impacts from La Niña are usually felt during a given location’s rainy season, because that is when a disruption of the rains or too much rainfall can have the greatest impact on society (affecting agriculture, livelihoods, food security, health and safety, etc).

Summary of current La Niña conditions
15 September 2011– The moderate to strong La Niña event that persisted from June 2010 to May 2011 weakened to neutral conditions over the following few months but re-strengthened in early August so that
weak La Niña conditions have now regenerated. For the months of September-November, weak La Niña conditions or neutral conditions are likely; there is virtually no chance that El Niño conditions will develop during this time. It is recommended to continue monitoring seasonal forecasts on a monthly basis for updates as it becomes clearer whether the weak La Niña conditions are likely to intensify, and how long they are likely to persist.

La Niña updates can be monitored for any developments in terms of the strength of the event. However, it is important to remember that the strength of a La Niña event only provides a rough indication of how widespread and severe associated impacts are likely to be on a global scale. The strength of a La Niña event does not provide certainty regarding the severity of impacts in specific locations. The best way to anticipate if this La Niña event is likely to bring too much or too little rainfall to your area is to monitor seasonal forecasts, which take influential factors from this La Niña and other elements in the climate system into account.

**Guidance on monitoring and connecting forecasts with actions to enhance preparedness and response**

The benefit that seasonal forecasts offer, which weather forecasts do not, is long-lead time or early warning information. Having an early indication that a rainy season might be wetter or drier than normal for instance can be a helpful guide to anticipate any potential impacts. However, monitoring seasonal forecasts should be supplemented with monitoring forecasts on shorter-term timescales (like 10-day, weekly and daily weather forecasts), to obtain more certainty and detail regarding where and when extreme events might occur. Seasonal rainfall forecasts are similar to seasonal cyclone forecasts in the sense that knowing if the cyclone season is likely to be more active than normal might prompt you to be more prepared, but you would have to monitor shorter-term weather and cyclone forecasts to anticipate where and when individual cyclones make landfall.

**Limitations**

*Important!* Seasonal Forecasts Do Not Provide Any Detailed Spatial Information. Weather forecasts are like a high-definition picture, giving you detailed information on exactly where rainfall is likely to occur. Seasonal forecasts however, are more big-picture (coarse resolution). Thus, it is not possible to make inferences about precisely where there are risks of increased or decreased rainfall. A forecast for increased risk of above-normal rainfall over West Africa, for example, should be taken as just that, and not as a forecast for above-normal rainfall in specific countries or parts of countries in West Africa.

*Important!* Seasonal Forecasts Only Give a General Sense of the Character of the Season by Providing a Forecast of Seasonal Rainfall Totals. The seasonal forecasts are for whether cumulative rainfall totals over 3 months time are likely to be normal, above-normal or below-normal. This gives you a general overview of the season, but does not elaborate on possible day-to-day weather fluctuations. Although it does not happen very often, it is possible for an area to receive a month's worth of rainfall in 1 day and thus suffer from floods, but end up having a seasonal total of below-normal rainfall consistent with the seasonal forecast.

*Important!* Seasonal forecasts are probabilistic. If you had no forecast, you would have no idea of whether rainfall would be normal, above-normal, or below-normal, and so each of these three possible outcomes would have a probability of 33%. Seasonal forecasts can tell you if one of those three categories is more likely than the others. However, probabilities for the less likely events should not be ignored, to avoid being over-confident in the forecasts. For example, a 45% chance of above normal-rainfall means that there is an enhanced chance of getting rainfall totals that are above-normal for the season, but there is still a 55% chance of getting normal or below-normal rainfall. Seasonal forecasts therefore leave a large
amount of uncertainty, but when combined with monitoring of weather forecasts on shorter timescales and a no-regrets early action strategy, can still be very beneficial by providing enhanced lead-time for preparedness.

One helpful guide may be to think of probabilities of 35 or 40% as being only slightly enhanced, 45 or 50% as enhanced, and greater than 50% as highly enhanced.

**Recommendations for connecting forecasts to actions for enhanced preparedness and response:**
If over the coming months seasonal precipitation (rainfall) forecasts for your region indicate a higher risk of abnormal rainfall, it is important to start considering the implications:

- What would too much or too little rainfall mean in terms of food security, health, disaster management, displacement and livelihoods?
- Who is vulnerable?
- What can be done to prepare? What kind of ‘no-regrets’ actions could be taken early on, that would help to manage these impacts?
- Are your contingency plans adequate and up to date?
- Are your relief stocks sufficient for probable demands?
- When was the last time that staff and volunteers received training on disaster management?
- Should you meet with staff to discuss the situation and collectively brainstorm possible courses of action?

Thinking through these questions with your colleagues is always a good idea. That way you can monitor conditions and forecasts for the months, weeks, days and hours ahead, to see if and when it becomes necessary to activate the plans and resources you’ve put in place. For more resources on developing an Early Warning, Early Action strategy, visit: [http://www.climatecentre.org/site/early-warning-early-action](http://www.climatecentre.org/site/early-warning-early-action)

**Monitoring Resources**

For short-term weather forecasts, the best place to check is with your national meteorological services. Some national meteorological services also provide seasonal forecast information. To find your national meteorological service: [http://www.wmo.int/pages/members/members_en.html](http://www.wmo.int/pages/members/members_en.html)

The resources provided below include global and regional sources for monitoring seasonal forecasts. In some cases, short-term weather forecasts are also provided by these institutions.

**Global Source:**
International Research Institute for Climate and Society (IRI)
- Seasonal forecasts: [http://iri.columbia.edu/ifrc/forecast/3munusualprecip](http://iri.columbia.edu/ifrc/forecast/3munusualprecip)

**Regional Sources:**

**Africa**
African Centre for Meteorological Applications for Development (ACMAD)
- Monthly, 10-day, and 24-hour forecasts also available
**East Africa**
IGAD Climate Prediction and Applications Centre (ICPAC)
- Seasonal, monthly and 10-day forecasts: [http://www.icpac.net/](http://www.icpac.net/)

**Southern Africa**
SADC Drought Monitoring Centre (DMC)
- Seasonal and 10-day forecasts: [http://www.sadc.int/dmc/](http://www.sadc.int/dmc/)

South African Weather Service
- Weather forecasts 11-30 days in advance, 7-day forecasts: [http://www.weathersa.co.za/](http://www.weathersa.co.za/)

**Asia**
Regional Climate Centre for RA II (Asia)
- Seasonal forecasts and monitoring products: [http://www.rccra2.org/detail/index.htm](http://www.rccra2.org/detail/index.htm)

ASEAN Specialised Meteorological Centre (ASMC)
- Seasonal forecast:
- La Niña/El Niño monitoring

**Pacific Islands**
Island Climate Update (ICU)

**Americas**
**Caribbean**
Caribbean Institute for Meteorology and Hydrology (CIMH)
- Seasonal forecast and drought monitoring resources: [http://www.cimh.edu.bb/](http://www.cimh.edu.bb/)

**Central America**
Climate Outlook Forum for Central America
- Seasonal forecast: [http://www.aguayclima.com/clima/inicio.htm](http://www.aguayclima.com/clima/inicio.htm)

**South America**
Centro Internacional para la Investigacion del Fenomeno de El Niño (CIIFEN)

**Historical La Niña Impacts**
While no two La Niña events are exactly alike, scientists have mapped out areas where La Niña has frequently been associated with increases or decreases in rainfall in the past, see: [http://portal.iri.columbia.edu/portal/server.pt/gateway/PTARGS_0_5665_7182_0_0_18/LaNinagraphic_aug207.pdf](http://portal.iri.columbia.edu/portal/server.pt/gateway/PTARGS_0_5665_7182_0_0_18/LaNinagraphic_aug207.pdf)

**The IFRC Helpdesk at IRI**
If you have questions about La Niña or forecasts etc. the International Research Institute for Climate and Society (IRI) has a helpdesk to provide the RC/RC with assistance in interpreting climate information relevant to the RC/RC’s work. To seek assistance from this source please e-mail your question to ifrc@iri.columbia.edu.