

International Charter Space and Major Disasters



Charter Activation 462
Charter Call ID 534
Disaster Event Flood
Disaster Location BRAZIL
Date of Final Reporting 24/08/2015

PM Report

*Reporting forms completed by: Rafael Pereira Machado and Lucas Mikosz – CENAD/Brazil

*Reporting forms reviewed by: Ivan Márcio Barbosa

Project Managers for Charter activations are expected to provide the PM report to the Charter Executive Secretariat within 45 days after the start of the activation.

A. Disaster Event Summary

*A1. Emergency type: Flood

*A2. Date disaster initiated: 11 June 2015

*A3. Disaster location and extent: BRAZIL (1106283.86 km²)

A4. Estimated number of deaths: 03

A5. Estimated number of people affected: At least 86.752

A6. Estimated economic losses: Not calculated yet.

A7. Additional disaster impacts (environmental, infrastructure, etc) : Isolated population and health problems associated with the floods. Difficult access to the affected areas. Property damages on many municipalities. Public services disrupted. The flood in this area rises slowly, allowing people to leave their houses with at least some personal belongings. The impact on the infrastructure is manageable, but before returning home, those families require aid for food and cleaning kits. The required aid has been provided by CENAD and other government agencies.

A8. Additional disaster event details:

Total of 40 municipalities affected, with 28 with recognized situation of emergency and 01 with calamity. This flood surpassed the previous highest record for river level, since the register has begun. This kind of flood travels slowly downstream, affecting many cities successively, sometimes with many days of interval.

* mandatory

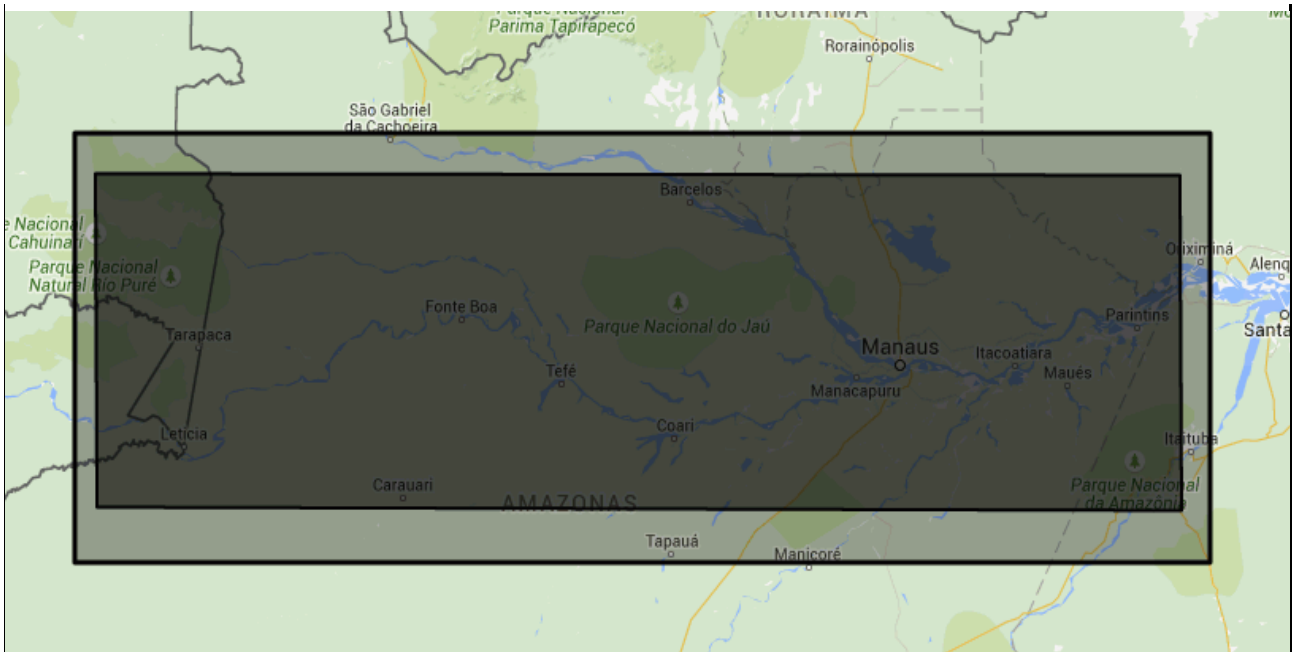
B. Activation Information Charter Call ID534

*B1. Date of Charter activation: 11 June 2015

*B2. Geographical Coordinates (Lat - Long)

Bounding Box:	Upper left corner: S 0°2' , W 71°27'	Centre Point(s):	(1):
	Upper right corner: S 0°2' , W 55°43'		(2):
	Lower left corner: S 5°44' , W 71°27'		(3):
	Lower right corner: S 5°44' , W 55°43'		

Polygons KML link for Call Id 534: <https://www.disasterscharter.org/documents/10180/64961/primary-534.kml/d65713e0-c9b3-4464-a4fe-997c42587b9e?version=1.0>



*B3. Authorized User/Requestor: Rafael Machado	*Organization: BRAZILIAN DISASTER AND RISK MANAGEMENT NATIONAL CENTRE - CENAD	*Date AU contacted ODO: 11 June 2015
*B4. ECO: ECO_ESA	*Organization: ESA	*Date ECO contacted PM: 12 June 2015
*B5. Project Manager: Rafael Pereira Machado	*Organization: BRAZILIAN DISASTER AND RISK MANAGEMENT NATIONAL CENTRE - CENAD	*Date PM nominated: 12 June 2015 01:29:00
B6. Value-adding Reseller or organization(s): BRAZILIAN DISASTER AND RISK MANAGEMENT NATIONAL CENTRE - CENAD		Date VAR received first images (dd/mm/yyyy): 16/06/2015
*B7. End User(s): Rafael Machado	*Organization: BRAZILIAN DISASTER AND RISK MANAGEMENT NATIONAL CENTRE - CENAD	Date first product delivered to End User (dd/mm/yyyy): 19/06/2015

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C. Intervention Summary

*C1. Describe the activation in detail and describe the interaction between the PM and the AU:

In this activation, the Authorized User and the Project Manager were the same person and organization. The decision for the activation was taken by the Disaster Managers at CENAD. Rafael Machado was nominated as the Project Manager, with Lucas Mikosz and Marcos Vinícius Borges as assintant.

*C2. Provide a chronology of events associated with the disaster and the Charter activation:

Call 534:

AU call submission on 11 Jun 2015 21:58:41

ECO URF validation on 12 Jun 2015 17:06:10

ERF v.1.0 sent to MPP of DMCII on 12 Jun 2015 17:06:52

ERF v.1.0 sent to MPP of CNES on 12 Jun 2015 17:07:27

ERF v.1.0 sent to MPP of CSA on 12 Jun 2015 17:07:48

ERF v.1.0 sent to MPP of DLR on 12 Jun 2015 17:08:07

ERF v.1.0 sent to MPP of ISRO on 12 Jun 2015 17:08:27

ERF v.1.0 sent to MPP of KARI on 12 Jun 2015 17:08:45

ERF v.1.0 sent to MPP of USGS on 12 Jun 2015 17:09:00

PM nominated on 12 Jun 2015 17:11:56

AAP received from MPP of DLR on 12 Jun 2015 19:50:21

Data Product received from MPP of DLR on 13 Jun 2015 08:45:19

AAP received from MPP of DLR on 15 Jun 2015 08:29:35

AAP received from MPP of DLR on 15 Jun 2015 08:33:01

AAP received from MPP of CSA on 15 Jun 2015 15:24:57

Data Product received from MPP of KARI on 16 Jun 2015 02:06:04

Data Product received from MPP of DLR on 18 Jun 2015 10:53:25

*C3. Fill in the table below identifying the available satellite data with an [X]. List the date (mm/dd/yyyy) that each image was collected).

Agency	Satellite Instrument Mode	Sensing dates of requested products	Date of:	Sensing / Reception dates of metadata / products			
				Attempt 1	Attempt 2	Attempt 3	Archive
CSA	RADARSAT -2 SAR WIDE	(Archive) 11/05/2009	Reception				
			Sensing				11/05/2009
CSA	RADARSAT -2 SAR WIDE_FINE	(Archive) 30/01/2013	Reception				
			Sensing				30/01/2013
CSA	RADARSAT -2 SAR WIDE_FINE	13/06/2015	Reception				
			Sensing	13/06/2015	14/06/2015		
DLR	TerraSAR-X SAR WS	12/06/2015	Reception		13/07/2015		
			Sensing	12/06/2015	13/06/2015		
DLR	TerraSAR-X SAR WS	14/06/2015	Reception	13/07/2015			
			Sensing	14/06/2015			
DLR	TerraSAR-X SAR WS	15/06/2015	Reception	13/07/2015			
			Sensing	15/06/2015			
DLR	TerraSAR-X SAR WS	16/06/2015	Reception	13/07/2015			
			Sensing	16/06/2015			
KARI	KOMPSAT-	18/06/2015	Reception	13/07/2015			

	2 MSC		Sensing	18/06/2015			
KARI	KOMPSAT-3 MSC	17/06/2015	Reception	13/07/2015			
			Sensing	17/06/2015			
CNES	Pleiades	13/06/2015	Reception	16/06/2015			
			Sensing	13/06/2015			
CNES	Pleiades	15/06/2015	Reception	16/06/2015			
			Sensing	15/06/2015			
CNES	Pleiades	16/06/2015	Reception	17/06/2015			
			Sensing	16/06/2015			
CNES	Pleiades	17/06/2015	Reception	18/06/2015			
			Sensing	17/06/2015			
CNES	Pleiades	18/06/2015	Reception	22/06/2015			
			Sensing	18/06/2015			
CNES	Pleiades	22/06/2015	Reception	23/06/2015			
			Sensing	22/06/2015			
CNES	Pleiades	22/06/2015	Reception	23/06/2015			
			Sensing	22/06/2015			
CNES	Pleiades	16/06/2015	Reception	17/06/2015			
			Sensing	16/06/2015			
CNES	Pleiades	16/06/2015	Reception	17/06/2015			
			Sensing	16/06/2015			
CNES	Pleiades	18/06/2015	Reception	22/06/2015			
			Sensing	18/06/2015			
CNES	Pleiades	26/06/2015	Reception	29/06/2015			
			Sensing	26/06/2015			
CNES	Pleiades	29/06/2015	Reception	30/06/2015			
			Sensing	29/06/2015			
NRSC/ISRO	Risat 1 CRS 2	13/06/2015	Reception	15/06/2015			
			Sensing	13/06/2015			
NRSC/ISRO	Risat 1 CRS 2	14/06/2015	Reception	15/06/2015			
			Sensing	14/06/2015			
NRSC/ISRO	Resourceta2 - AWiFs	18/06/2015	Reception	19/06/2015			
			Sensing	18/06/2015			
ROSCOSMOS	Resurs-P	15/06/2015	Reception	15/06/2015			
			Sensing	15/06/2015			
ROSCOSMOS	Resurs-P	14/06/2015	Reception	15/06/2015			
			Sensing	14/06/2015			
ROSCOSMOS	Resurs-P	27/06/2015	Reception	27/06/2015			
			Sensing	26/06/2015			
ROSCOSMOS	Kanopus-V	28/06/2015	Reception	28/06/2015			
			Sensing	28/06/2015			

ESA	Sentinel-1	14/06/2015	Reception	15/06/2015			
			Sensing	14/06/2015			
USGS	Landsat 7	15/06/2015	Reception	15/06/2015			
			Sensing	13/06/2015			
USGS	Landsat 7	15/06/2015	Reception	15/06/2015			
			Sensing	14/06/2015			
USGS	Worldview2	13/06/2015	Reception	16/05/2015			
			Sensing	13/06/2015			
USGS	Worldview2	14/06/2015	Reception	16/05/2015			
			Sensing	14/06/2015			
USGS	Landsat7	15/06/2015	Reception	16/05/2015			
			Sensing	15/05/2015			
DMCii	UK-DMCII	15/06/2015	Reception	16/06/2015			
			Sensing	15/06/2015			
USGS	Landsat 8	16/06/2015	Reception	17/06/2015			
			Sensing	16/06/2015			
USGS	Worldview 1	16/06/2015	Reception	17/06/2015			
			Sensing	16/06/2015			
USGS	Landsat 7	16/06/2015	Reception	19/06/2015			
			Sensing	16/06/2015			
USGS	Landsat 7	18/06/2015	Reception	19/06/2015			
			Sensing	18/06/2015			
USGS	Landsat 8	17/06/2015	Reception	19/06/2015			
			Sensing	17/06/2015			
USGS	Landsat 8	18/06/2015	Reception	19/06/2015			
			Sensing	18/06/2015			
USGS	EO-1	16/06/2015	Reception	19/06/2015			
			Sensing	16/06/2015			
USGS	Landsat 7	22/06/2015	Reception	23/06/2015			
			Sensing	22/06/2015			
DMCii	UK-DMCII	17/06/2015	Reception	23/06/2015			
			Sensing	17/06/2015			
DMCii	UK-DMCII	19/06/2015	Reception	23/06/2015			
			Sensing	19/06/2015			
DMCii	UK-DMCII L1T	17/06/2015	Reception	23/06/2015			
			Sensing	17/06/2015			
USGS	EO-1	18/06/2015	Reception	24/06/2015			

			Sensing	18/06/2015			
USGS	Landsat 8	23/06/2015	Reception	24/06/2015			
			Sensing	23/06/2015			
USGS	Landsat 7	24/06/2015	Reception	25/06/2015			
			Sensing	24/06/2015			
USGS	Aster	25/06/2015	Reception	26/06/2015			
			Sensing	25/06/2015			
USGS	Worldview2	25/06/2015	Reception	26/06/2015			
			Sensing	25/06/2015			
USGS	Landsat 8	25/06/2015	Reception	26/06/2015			
			Sensing	25/06/2015			
USGS	Landsat 7	25/06/2015	Reception	26/06/2015			
			Sensing	25/06/2015			
USGS	Worldview 2	26/06/2015	Reception	26/06/2015			
			Sensing	26/06/2015			
USGS	Worldview 3	26/06/2015	Reception	26/06/2015			
			Sensing	26/06/2015			
USGS	Worldview 2	27/06/2015	Reception	29/06/2015			
			Sensing	27/06/2015			
USGS	Worldview 3	28/06/2015	Reception	29/06/2015			
			Sensing	28/06/2015			
USGS	EO-1	24/06/2015	Reception	29/06/2015			
			Sensing	24/06/2015			
USGS	Landsat 8	26/06/2015	Reception	29/06/2015			
			Sensing	26/06/2015			
USGS	Landsat 7	29/06/2015	Reception	30/06/2015			
			Sensing	29/06/2015			
USGS	Landsat 8	30/06/2015	Reception	02/07/2015			
			Sensing	30/06/2015			
USGS	Landsat 7	29/06/2015	Reception	07/07/2015			
			Sensing	29/06/2015			
USGS	Worldview 2	02/07/2015	Reception	07/07/2015			
			Sensing	02/07/2015			

* mandatory

D. Intervention Assessment

D1. Explain how the value-adding service provider was chosen:

On the present Call, CENAD used its own Monitoring Division to generate value added products. No external service provider was required.

*D2. List the value-added products obtained from the Charter data:

1. Affected Areas By Solimões River Flooding at Codajas City - Amazonas State, Brazil - June 17th, 2015
2. City of Itacotiara - Amazonas State - Flooded Areas - 17th June 2015
3. Affected Areas By Solimões River Flooding at Tefé City - Amazonas State, Brazil - June 13th, 2015
4. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Tefé City - Amazonas State, Brazil - June 13th, 2015
5. Cities of Amatura and Santo Antônio do Iça - Amazonas - Affected Areas Overview - 13th June 2015
6. City of Jutai - Amazonas - Affected Areas Overview - 13th June 2015
7. City of Coari - Amazonas - Affected Areas Overview - 13th June 2015
8. Cities of Codajas and Anori - Amazonas - Affected Areas Overview - 13th June 2015
9. City of Tonantins - Amazonas - Affected Areas Overview - 13th June 2015
10. City of Fonte Boa - Amazonas - Affected Areas Overview - 13th June 2015
11. Cities of Itapiranga, São Sebastião do Uatuma e Urusara - Amazonas - Affected Areas Overview - 13th June 2015
12. Affected Areas by Solimões River Flooding at Benjamin Constant City - Amazonas State, Brazil - June 18th, 2015
13. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Benjamin Constant City - Amazonas State, Brazil - June 18th, 2015 - 1
14. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Benjamin Constant City - Amazonas State, Brazil - June 18th, 2015 - 2
15. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Careiro da Várzea City - Amazonas State, Brazil - June 22th, 2015 - 1
16. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Careiro da Várzea City - Amazonas State, Brazil - June 22th, 2015 - 2
17. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Careiro da Várzea City - Amazonas State, Brazil - June 22th, 2015 - 3
18. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Anori City - Amazonas State, Brazil - June 22th, 2015 - 1
19. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Anori City - Amazonas State, Brazil - June 22th, 2015 - 2
20. Parintins City - Amazonas - Affected Areas on 14th June 2015
21. City of Uricutuba
22. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Coari City - Amazonas State, Brazil - June 26th, 2015
23. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Anamá City - Amazonas State, Brazil - June 29th, 2015
24. Affected Areas by Solimões River Flooding at Manacapuru City - Amazonas State, Brazil - June 15th, 2015
25. Comparing pre-disaster and post-disaster - affected areas by Solimões River Flooding at Manacapuru City - Amazonas State, Brazil - June 15th, 2015
26. Affected Areas - Amazonas State

*D3. Comment on the quality of the value-added products:

The value added products were generated on demand, based on the data required by the Disasters Response Team. The overall quality of the products is good and CENAD is constantly improving its techniques for a better utilization of the data provided by charter.

D4. Identify the end users of the value-added products and how they used the products during the various phases of the disaster cycle. If the value-added products were used to illustrate the impact or extent of the disaster during briefing meetings, include this information:

The main end user of the products was the Coordination of Disaster Response from CENAD, focused on the nominated Disaster Manager for Amazonas area. Based on affected areas identified on the value-added products, the Logistics Division of the Disaster Response Team planned and supplied Humanitarian Assistance (fuel, food, cleaning kits and shelter). The generated value-added products were displayed on the Operation and Monitoring Room Video wall, which displays information for the Coordination of Disaster Response, Logistics Division, Coordination of Disasters Recognition, Monitoring Division and Geoprocessing Subdivision. The data produced was also supplied to the Amazonas State Civil Defense.

*D5. Comment on how useful the value-added products were in practice for the end user. Include any other relevant information about how the Charter assisted the end user in mitigating the effects of the disaster:

With the data provided by the value-added products, the Response efforts could be focused on the worst affected areas. Also, the amount of Humanitarian Aid sent to the affected areas was calculated based on the intersection between the affected areas identified on Charter data and census data provided by Brazilian Institute of Geography and Statistics - IBGE. This methodology was already tested with success on previous charter activations.

*D6. Identify data provided by the Charter that was not used. If possible, explain why it was not used:

Due to the small size of the communities on the affected areas, most of the data with resolution over 10m could not be used, because it wasn't possible to properly identify the presence of flooded areas on streets and between houses.

D7. Based on use of the data provided by the Charter, provide recommendations to improve the scenarios for Charter activations of this type in the future:

1. Centering the activities on the COS-2 ambient would be positive, as the hardest part on the PM task is to deal with different servers, FTPs and download methods, with high volume and sensitive information.
2. On the case scenario, where the disaster is gradual and can be predicted with high level of accuracy, would be very useful to start the monitoring activities early, before the disaster fully strikes.

*D8. Summarize the conclusions of the project. Discuss any relevant issues associated with the use of the value-added products in the emergency response; the functional units of the Charter; the ability of the PM, value-added service provider and end users to work within the Charter structure; and/or, any other issues encountered during the activation:

In this activation, the Project Manager, the value-added service providers and the end users are all located on CENAD's structure. This charter activation was larger than the previous ones and it was an opportunity to stress test the center capacity. The issues identified are mainly related to downloading, validating and organizing large amounts of data, and probably will be solved with the new version of the Charter Operational System.

D9. Additional comments, questions, observations, and lessons learned:

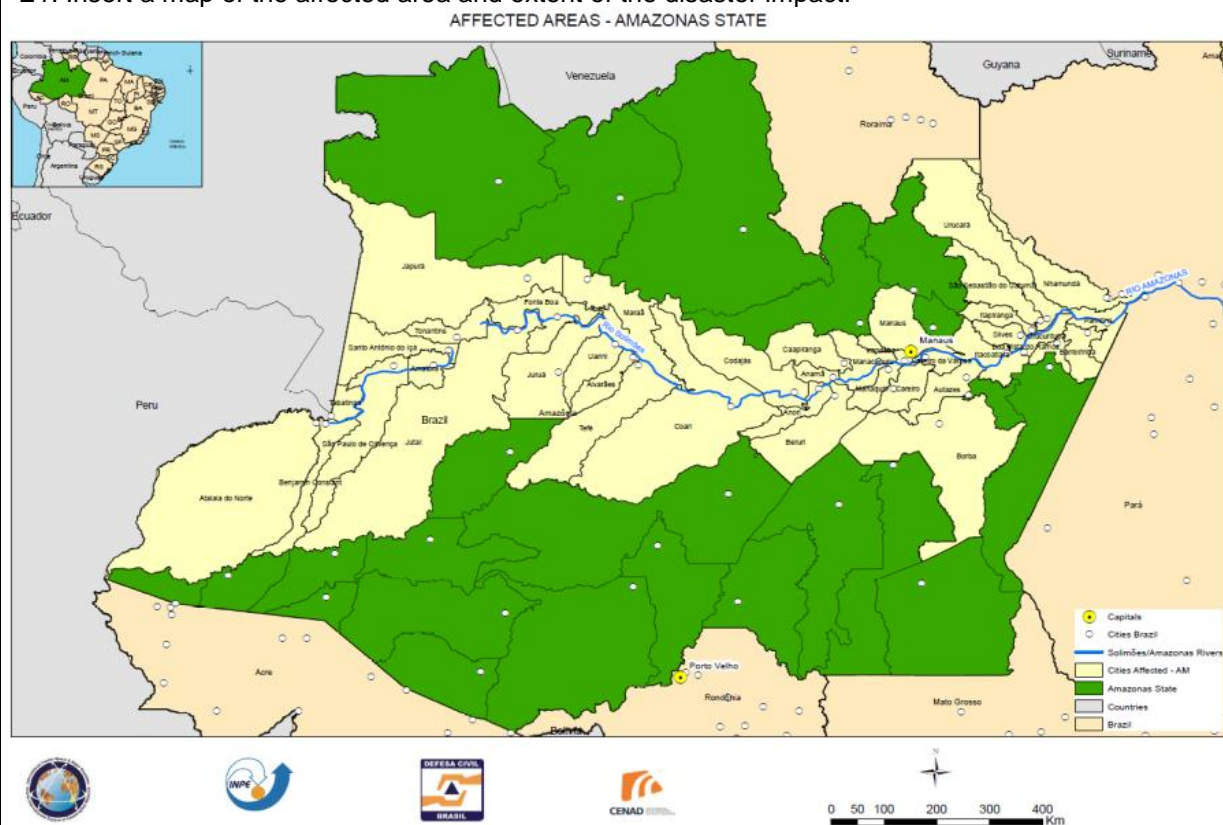
1. The value added data supplied by DLR was very useful, as it cut short the data interpretation and allowed fast use of information.
2. This activation was unusual because the duration of this disaster was longer than usual and the peak flood on each city could be identified with some days in advance. In this scenario, the duration of the call, the delivery of the first products and the end of the call may not happen as fast as usual. The disaster cycle, from the first affected cities to the end of the disaster may take about 2 months.

D10. Provide a copy of user feedback forms submitted by the end users or email correspondence regarding the end use(s).

As noted above, the Project Manager, the Value-adding service provider and the End user are all located on the same Organization.

E. Supporting Documentation

*E1. Insert a map of the affected area and extent of the disaster impact:



*E2. Provide samples of media coverage of the disaster event from TV, radio, news papers, websites, etc. Where possible, copy the content of the article into the PM report rather than only the web addresses:

2015.07.29

<http://g1.globo.com/am/amazonas/noticia/2015/04/em-tabatinga-rio-solimoes-esta-23-cm-de-atingir-cheia->

29/04/2015 12h45 - Atualizado em 29/04/2015 13h24

Em Tabatinga, Rio Solimões está a 23 cm de atingir cheia histórica no AM

Ruas da cidade estão inundadas e mais de 20 escolas estão sem aulas. Em todo o Amazonas, 19 municípios estão em estado de emergência.

Adneison Severiano
Do G1 AM



No início desta semana, crianças e adultos se artiscam em passarelas improvisadas em Tabatinga (Foto: Adneison Severiano/G1 AM)

O nível do Rio Solimões voltou a subir na cidade de Tabatinga, de acordo com Defesa Civil Municipal. A cota do rio na região chegou a 13,59 metros nesta quarta-feira (29). A marca está a 23 cm de atingir a enchente histórica registrada há 16 anos na cidade. Em razão da subida das águas, ruas estão inundadas e mais de 20 escolas estão com as aulas suspensas. Em todo o **Amazonas**, 19 municípios estão em estado de emergência em decorrência da cheia.

Tabatinga fica localizada na tríplice fronteira (Brasil, Colômbia e Peru) a 1.105 km de **Manaus**. A cidade é situada na calha do Alto Solimões, região mais afetada pela cheia deste ano no Amazonas.

saiba mais

Sobe para 19 número de cidades em emergência por conta da cheia no AM

A 28 cm de cota histórica, cheia do Rio Solimões afeta milhares no AM

Tonantins é 17ª cidade a decretar emergência com cheia no Amazonas

Cheia avança e número de pessoas afetadas chega a 103 mil no AM

Cheia no Rio Solimões faz Tabatinga decretar emergência, no Amazonas

De acordo com dados da Defesa Civil, a cheia histórica em Tabatinga ocorreu em maio de 1999, quando a cota do Rio Solimões atingiu a marca de 13,82 metros. Em relação à segunda maior cheia registrada na cidade, ocorrida em 2012, o nível está a 17 cm. Na terça-feira (28), o rio estava com 13,56 metros.

O secretário da Defesa Civil Municipal, José Costa, informou que o nível das águas se manteve estável entre domingo e segunda, mas voltou a subir na terça. Ele informou ainda que equipes do órgão acompanham diariamente a subida do rio. "Estamos monitorando as áreas de risco e, ainda na tarde de hoje, teremos um levantamento, que

possivelmente indicará o aumento do número de pessoas e famílias afetadas pela enchente no município", destacou.



Área de comércio está inundada
(Foto: Adneison Severiano/G1 AM)

No domingo (26), o **G1** percorreu ruas e bairros alagados em Tabatinga e constatou os efeitos da cheia aos moradores locais. Em toda a cidade, seis localidades ribeirinhas estão submersas. Entre os locais afetados estão: Bairro Guadalupe, Dom Pedro, Portobras, Brilhante, Umariçu I e II. De acordo com titular da Defesa Civil Estadual, coronel Roberto Rocha, o nível do Rio Solimões tem aumentado cada a cada dia na região.

Além de moradores afetados, comerciantes também relatam prejuízos. Ao todo, 28

escolas da rede pública de ensino estão com atividades paralisadas e com 1.631 alunos sem aulas há mais de 30 dias.

Segundo a Defesa Civil, 25% da área urbana e 50% da zona rural estão alagados. O avanço das águas atingiu 29 comunidades, afetando quase 9 mil moradores. Entre desabrigadas e desalojadas são 88 famílias.

Cheia

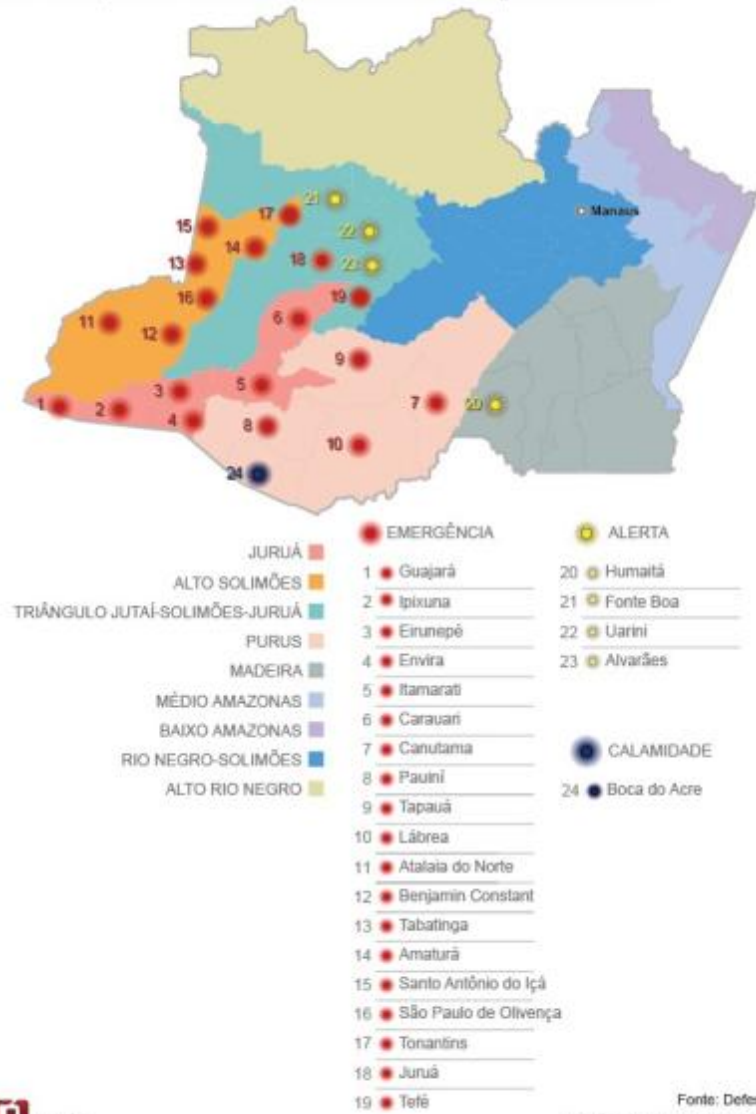
No Amazonas, 19 cidades estão em situação de emergência. Na calha do Rio **Juruá** os municípios afetados são: **Itamarati**, Guajará, **Ipixuna**, **Envira** e Juruá. Na calha do Rio Purus, **Canutama**, **Tapauá**, Carauari, **Paulini** e **Lábrea** sofrem danos causados pela cheia. **Atalaia do Norte**, **Benjamin Constant**, Tabatinga, **Amaturá**, **Santo Antônio do Içá**, **São Paulo de Olivença** e **Tonantins** situados no Alto Solimões também estão em situação de emergência por causa do avanço das águas. Na calha do Médio Solimões, **Tefé** está na mesma situação.

O município de **Boca do Acre** é o mais afetado pela cheia com 20.905 pessoas de 4.181 famílias atingidas. A cidade, que fica no Sul do estado e banhado pelo Rio Purus, está em estado de calamidade pública. Humaitá (Rio Madeira) e outros quatro municípios do Médio Solimões - **Fonte Boa**, **Uarini** e **Alvarães** - estão situação de alerta.

Ao todo, 110.610 pessoas de 22.116 famílias foram afetadas pela cheia dos rios neste ano. Os dados são da Defesa Civil Estadual, que tem coordena a ajuda humanitária e assistências às vítimas. Já distribuídos 363 toneladas de alimentos não perecíveis, além de medicamentos, materiais para purificação da água (filtros e hipoclorito de sódio) e kit's dormitório (colchões, redes e mosquiteiros). Instituições públicas e empresas doaram parte dos mantimentos. O governo do estado repassou R\$ 1.200.000 as prefeituras de quatro municípios.

Cidades do Amazonas afetadas pela cheia em 2015

Até 29 de abril, 24.733 mil famílias são afetadas no estado, segundo a Defesa Civil



2015.04.27

<http://g1.globo.com/am/amazonas/noticia/2015/04/28-cm-de-cota-historica-cheia-do-rio-solimoes-afeta-milhares-no-am.html>

A 28 cm de cota histórica, cheia do Rio Solimões afeta milhares no AM

Município de Tabatinga tem 75% de áreas alagadas; rio chegou a 13,54 m. 18 municípios estão em situação de emergência no interior do estado.

Adneison Severiano
Do G1 AM



Tabatinga, no interior do Amazonas, tem 75% de áreas alagadas (Foto: Adneison Severiano/G1 AM)

A menos de 30 centímetros de alcançar o nível da maior cheia do Rio Solimões, Tabatinga está com 75% das zonas urbana e rural atingidas pela subida das águas. A estimativa da Defesa Civil Municipal é que cerca de 9 mil pessoas estejam atingidas pela cheia deste ano. Ruas alagadas dificultam a circulação de pessoas e veículos pelas ruas. Em toda a cidade, 20 escolas estão com aulas suspensas. Tabatinga é um dos 18 municípios em situação de emergência por conta da enchente no interior do Amazonas. Moradores de áreas alagadas relatam transtornos em uma das maiores cheias dos últimos anos.

saiba mais

FOTOS: cheia do Rio Solimões inunda Tabatinga, no AM

Tonantins é 17ª cidade a decretar emergência com cheia no Amazonas

Cheia avança e número de pessoas afetadas chega a 103 mil no AM

Cheia no Rio Solimões faz Tabatinga decretar emergência, no Amazonas

O município de Tabatinga fica localizado na tríplice fronteira (Brasil, Colômbia e Peru) a 1.105 km de Manaus. A cidade é situada na calha do Alto Solimões, região mais afetada pela cheia no Amazonas, que agora convive com a iminência de registrar mais uma enchente histórica. **(Veja abaixo o mapa com as cidades atingidas pela cheia)**

O nível do Rio Solimões alcançou a marca de 13,54 metros neste domingo (26). Faltam apenas 28 centímetros para a cota histórica de 13,82 m, registrada na cheia de 1999, ser atingida e 22 cm para chegar ao segundo

maior nível registrado em Tabatinga (cheia de 2012). Segundo a Defesa Civil Municipal, o rio tem subido cerca de 4 centímetros diariamente.



Adelaide Gonçalves teme pela segurança da família (Foto: Adneison Severiano/G1 AM)

Da porta da residência onde mora com mais 13 pessoas, a dona de casa Adelaide Gonçalves, de 52 anos, acompanha o avanço das águas. Ela é moradora do Bairro Guadalupe, uma das seis localidades ribeirinhas que estão submersas. A população utiliza passarelas de madeira improvisadas para circular pelas ruas.

"São muitas dificuldades que enfrentamos. Nossa vida é determinada pelo rio. Dentro da minha casa já estamos com mais de um metro de

maromba [assoalho de madeira suspenso]. As cobras entram nas nossas casas. Se o rio subir mais vou perder móveis como aconteceu na cheia de 2012", relatou ao G1.

“

São muitas dificuldades que enfrentamos. Nossa vida é determinada pelo rio”

Mesmo há 20 anos convivendo com regime de cheias e os danos gerados pela inundação, Adelaide mantém o anseio de deixar para trás a vida às margens do Solimões. "Há quatro anos espero a residência que a prefeitura prometeu. É um sonho sair dessa enchente. Não suportamos passar todos os anos por essa situação", desabafou a dona de casa.

Outros cinco bairros de Tabatinga estão alagados: Dom Pedro, Portobras, Brilhante, Umariçu I e II. De acordo com titular da Defesa Civil Estadual, coronel Roberto Rocha, o nível do Rio Solimões tem aumentado cada a cada dia na região.

Adelaide Gonçalves, dona de casa

"Temos uma preocupação com essa evolução gradual e gradativa. Acreditamos que pode chegar ou ultrapassar a marca da cheia de 2012. Por isso estamos reforçando a linha de trabalho da distribuição de medicamentos e a retirada das famílias de áreas alagadas para

levá-las aos abrigos seguros", explicou Roberto Rocha.

Escolas sem aulas

Segundo o secretário de Defesa Civil do município, J. Costa, 25% da área urbana e 50% da zona rural estão alagados. O avanço das águas atingiu 29 comunidades, afetando quase 9 mil moradores.

"Estamos com 28 escolas da rede pública de ensino com atividades paralisadas e com 1.631 alunos sem aulas há mais de 30 dias. Entre desabrigados e desalojados são 88 famílias", informou o secretário.



Defesa Civil tem monitorado as áreas de risco em Tabatinga (Foto: Adneison Severiano/G1 AM)

Uma das reclamações dos moradores de área de risco é a demora para entrega de unidades habitacionais. O representante da prefeitura justificou que houve um atraso na conclusão das obras de 300 casas que deveriam ter sido entregues em dezembro de 2014. O projeto tem recursos do programa Minha Casa, Minha Vida. "Os beneficiários prioritários dessas casas populares são as famílias de áreas de risco. A previsão é que até junho as obras sejam concluídas", afirmou Costa.

Balanço da Cheia

No Amazonas, 18 cidades estão em situação de emergência. Na calha do Rio Juruá os municípios afetados são: Itamarati, Guajará, Ipixuna, Envira e Juruá. Na calha do Rio Purus, Canutama, Tapauá, Carauari, Pauini e Lábrea sofrem danos causados pela cheia. Atalaia do Norte, Benjamin Constant, Tabatinga, Amaturá, Santo Antônio do Itá, São Paulo de Olivença e Tonantins situados no Alto Solimões também estão em situação de emergência por causa do avanço das águas.



Casas ficaram isoladas com elevação do nível das águas (Foto: Adneison Severiano/G1 AM)

O município de Boca do Acre é o mais afetado pela cheia com 20.905 pessoas de 4.181 famílias atingidas. A cidade, que fica no Sul do estado e banhado pelo Rio Purus, está em estado de calamidade pública. Humaitá (Rio Madeira) e outros quatro municípios do Médio Solimões - Fonte Boa, Uarini, Alvarães e Tefé - estão situação de alerta.

Ao todo, 110.610 pessoas de 22.116 famílias foram afetadas pela cheia dos rios neste ano. Os dados são da Defesa Civil Estadual, que tem coordenado a ajuda humanitária e assistências às vítimas. Já distribuídos 363 toneladas de alimentos não perecíveis, além de medicamentos, materiais para purificação da água (filtros e hipoclorito de sódio) e kits dormitório (colchões, redes e mosquiteiros). Instituições públicas e empresas doaram parte dos mantimentos. O governo do estado repassou R\$ 1.200,000 as prefeituras de quatro municípios.



Casas foram invadidas pelas águas (Foto: Adneison Severiano/G1 AM)

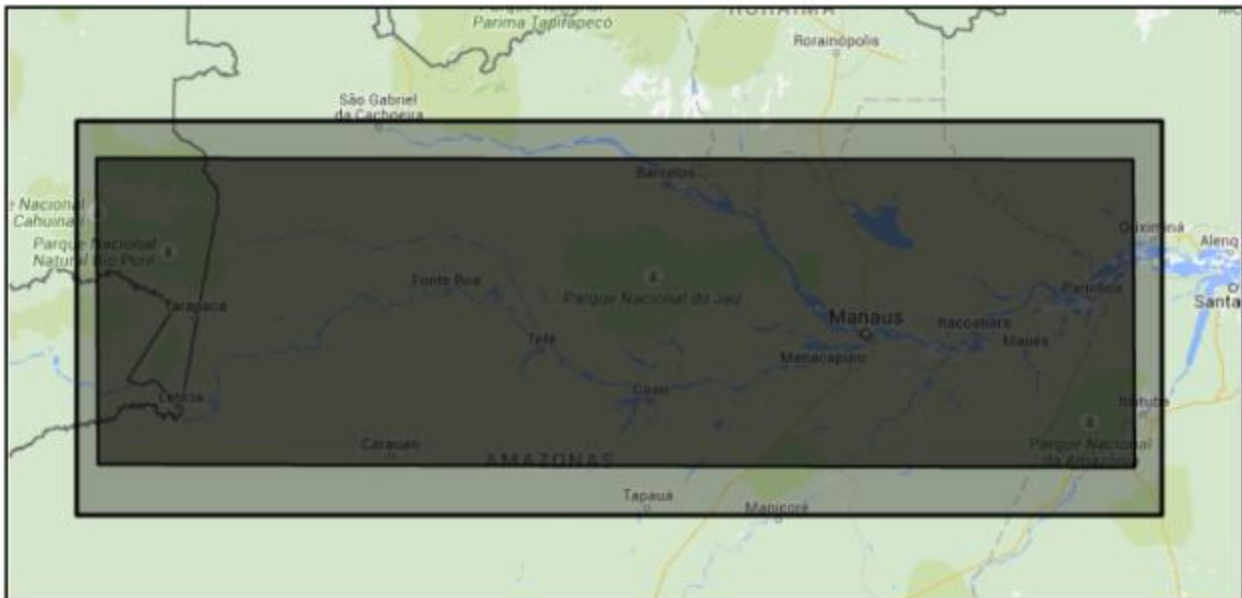


População afetada improvisa estrutura de madeira (Foto: Adneison Severiano/G1 AM)

*E3. Insert a copy of the URF here:

User Request Form (Affected area information)

Call ID 534																
1. Date and time of the call	11 June 2015 21:37:56 UTC+02:00 (11 June 2015 19:37:56 UTC)															
2a. Name of the Organisation and Authorised User or Cooperating Body																
Organization	BRAZILIAN DISASTER AND RISK MANAGEMENT NATIONAL CENTRE - CENAD															
Name	Rafael Machado															
Phone	55 61 20344620															
Fax	+55 61 20344600															
Mail	rafael.machado@integracao.gov.br															
2b. Name of the Organisation and End User																
Organization	BRAZILIAN DISASTER AND RISK MANAGEMENT NATIONAL CENTRE - CENAD															
Name	Rafael Machado															
Phone	55 61 20344620															
Fax	+55 61 20344600															
Mail	rafael.machado@integracao.gov.br															
3. Type of disaster																
<input type="checkbox"/> earthquake <input type="checkbox"/> ice <input type="checkbox"/> ocean wave (tsunami) <input type="checkbox"/> fire <input type="checkbox"/> landslide <input type="checkbox"/> oil spill <input checked="" type="checkbox"/> flood <input type="checkbox"/> ocean storm (hurricane, cyclone, typhoon) <input type="checkbox"/> volcano Other:																
4. Geographical location	5. Geographical Coordinates in Degrees, minutes, seconds															
Region / Country name, approximate geographical location and surface extent Region/Country name: / BRAZIL Location From Tabatinga To Parintins Extent (km2) 1106283.86	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>a) Center Point(s) in priority order</td> <td>b) Upper left</td> </tr> <tr> <td>Lat: ° ' " N</td> <td>Lat: 0° 2' 7" S</td> </tr> <tr> <td>Long: ° ' " E</td> <td>Long: 71° 27' 50" W</td> </tr> <tr> <td>Lat: ° ' " N</td> <td rowspan="2" style="text-align: center; vertical-align: middle;"> <div style="border: 1px solid black; width: 150px; height: 50px; margin: 0 auto;"></div> </td> </tr> <tr> <td>Long: ° ' " E</td> </tr> <tr> <td>Lat: ° ' " N</td> <td style="text-align: right;">Lower right</td> </tr> <tr> <td>Long: ° ' " E</td> <td>Lat: 5° 44' 18" S</td> </tr> <tr> <td></td> <td>Long: 55° 43' 53" W</td> </tr> </table>	a) Center Point(s) in priority order	b) Upper left	Lat: ° ' " N	Lat: 0° 2' 7" S	Long: ° ' " E	Long: 71° 27' 50" W	Lat: ° ' " N	<div style="border: 1px solid black; width: 150px; height: 50px; margin: 0 auto;"></div>	Long: ° ' " E	Lat: ° ' " N	Lower right	Long: ° ' " E	Lat: 5° 44' 18" S		Long: 55° 43' 53" W
a) Center Point(s) in priority order	b) Upper left															
Lat: ° ' " N	Lat: 0° 2' 7" S															
Long: ° ' " E	Long: 71° 27' 50" W															
Lat: ° ' " N	<div style="border: 1px solid black; width: 150px; height: 50px; margin: 0 auto;"></div>															
Long: ° ' " E																
Lat: ° ' " N	Lower right															
Long: ° ' " E	Lat: 5° 44' 18" S															
	Long: 55° 43' 53" W															



Primary KML link: <https://intlicharacter-prod.netcetera.ch/documents/10180/64961/primary-534.kml/d65713e0-c9b3-4464-a4fe-997c42587b9e?version=1.0>

6. Aproximate date/time of occurrence or predicted occurrence
 11 June 2015 16:13:37 UTC-03:00 (11 June 2015 19:13:37 UTC) Occurred

7. Additional information on the disaster

Since April 2015 the cities along Solimoes and Amazon Rivers are being affected by major floodings. The 2015 flood is comparable to the occurred in 2012, which was the worst flood in the history data. Around 250,000 people are being affected by the disaster.

The extensive polygon required, is justified due to the large area of flooding and bigger number of affected cities.

- Up to now around 39 cities are being flooded.
- Attached kml file contains the center points.

8. Additional Instructions (shipping instructions)

- Due to the emergency situation the images are needed in near real time. Download can be done via internet.
- Due to flooding characteristics, optical images are more appropriate.
- The images will help to observe the flooding impacts at the cities and small villages installed close to river.

Submitted by

AU

Other

*E4. Provide a copy of the Emergency Data Request Submission forms for the various satellites:

EMERGENCY REQUEST FORM – (common part)

Date 11 June 2015

Call ID: 534

ECO on-duty

Name ECO_ESA ECO_ESA
Agency
Phone
Fax
Mail eco-esa@esa.int

AU

Organization BRAZILIAN DISASTER AND RISK MANAGEMENT NATIONAL CENTRE - CENAD
Name Rafael Machado
Phone 55 61 20344620
Fax +55 61 20344600
Mail rafael.machado@integracao.gov.br

EU

Organization BRAZILIAN DISASTER AND RISK MANAGEMENT NATIONAL CENTRE - CENAD
Name Rafael Machado
Phone 55 61 20344620
Fax +55 61 20344600
Mail rafael.machado@integracao.gov.br

Emergency type

- | | | |
|---|--|---|
| <input type="checkbox"/> earthquake | <input type="checkbox"/> ice | <input type="checkbox"/> ocean wave (tsunami) |
| <input type="checkbox"/> fire | <input type="checkbox"/> landslide | <input type="checkbox"/> oil spill |
| <input checked="" type="checkbox"/> flood | <input type="checkbox"/> ocean storm (hurricane, cyclone, typhoon) | <input type="checkbox"/> volcano |

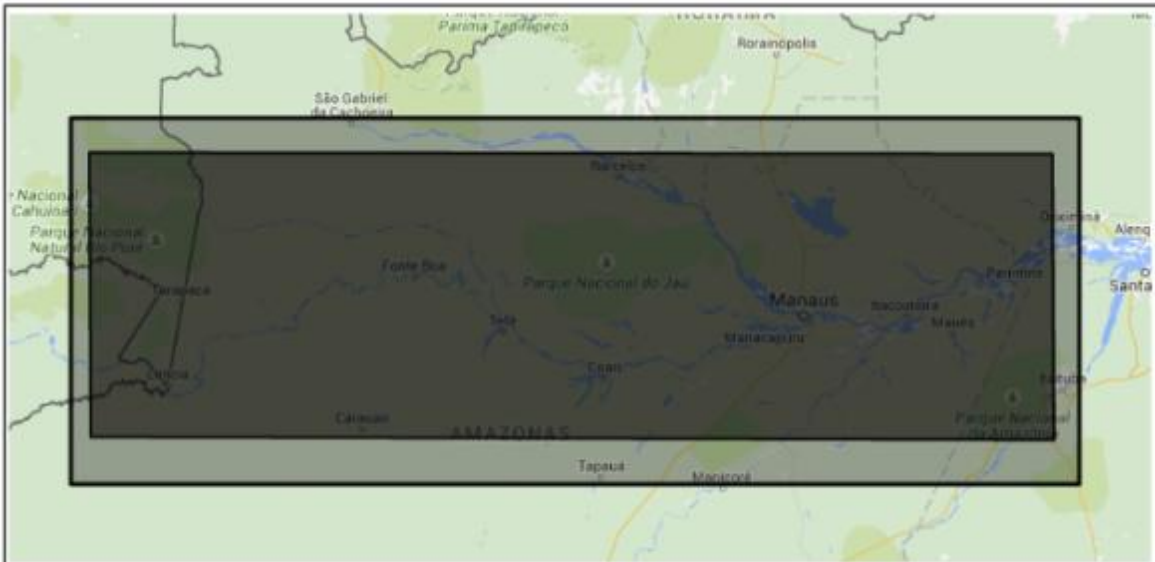
Other:

Area Details

Geographical location	Geographical Coordinates in Degrees, minutes, seconds	
Region / Country name, approximate geographical location and surface extent Region/Country name: / BRAZIL Location From Tabatinga To Parintins Extent (km2) 1106283.86	a) Center Point(s) in priority order Lat: ° ' " N Long: ° ' " E Lat: ° ' " N Long: ° ' " E Lat: ° ' " N Long: ° ' " E	b) Upper left Lat: 0° 2' 7" S Long: 71° 27' 50" W <div style="border: 1px solid black; width: 150px; height: 50px; margin: 10px auto;"></div> <p style="text-align: right; margin-right: 20px;">Lower right</p> Lat: 5° 44' 18" S Long: 55° 43' 53" W

Primary KML Link:

<https://intlcharter-prod.netcetera.ch/documents/10180/64961/primary-534.kml/d65713e0-c9b3-4464-a4fe-997c42587b9e?version=1.0>



Comments and Special Instructions:

*E5. Provide a copy of any user feedback forms submitted by the end users or email correspondence regarding the end use(s).

User Feedback Form

Indicate your choice with an “X”. (VG: Very Good, G: Good, R: Regular, B: Bad)

1. Did you encounter difficulties in triggering the Charter?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Comments:		
2. How was the communication with the Charter officers?	VG <input checked="" type="checkbox"/>	G <input type="checkbox"/> R <input type="checkbox"/> B <input type="checkbox"/>
Comments:		
3. Did the delivered data fulfill your request?	Yes <input checked="" type="checkbox"/>	Partly <input type="checkbox"/> No <input type="checkbox"/>
Comments:		
4. Were the data delivered in due time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If not, what was your expectation?		
Comments:		
5. Were data delivered in an appropriate way?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comments:		
6. Were data presented in an appropriate format?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comments:		
7. Was the information content relevant and accurate?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

Comments:

8. How was the overall quality of the products delivered? VG G R B

Comments:

9. Did you use the data for:

Operations Communication Planning Documentation

Lessons Learned Other Nothing

Comments:

10. Overall, the Charter contribution to this emergency was: VG G R B

Comments:

Additional Comments:

In the context of disaster followed by activation of the International Disasters Charter, CENAD plays three simultaneous roles: Authorized Operator, Project Manager and End User.

In the role of Authorized Operator, CENAD monitors natural disasters in Brazil and decide, in joint operation with INPE, in which time the situation is suitable for the international protocol activation.

The present Call is the largest Charter Activation for Brazil at the moment. With 40 municipalities affected by the floods in Solimões and Amazonas River in Amazonas State, at least 26 value added products were generated. Many monitoring stations reached maximum historical levels and it was possible to acquire images registering the peak of the disaster, providing rich information to the response and aid teams.

As the End User, CENAD uses the information obtained in the charter to scale the gravity of the situation in remote areas and calculate the necessary aid efforts. At this stage, the team processes the data obtained by the Charter and supplies information to the relief teams, humanitarian assistance of the own structure of CENAD and the National Protection and Civil Defense Secretariat, and even the administrative and political decision-making spheres of the country.

The floods in Solimões and Amazonas River usually rise slowly and last for a few weeks, allowing some level of planning. The activation of Charter at the peak level of those floods allowed a better understanding of it and about the affected areas.

*E6. Provide a copy of the value-added products here. Please insert copies into this document as .jpeg or other small file formats:

AFFECTED AREAS BY SOLIMOES RIVER FLOODING AT CODAJAS CITY - AMAZONAS STATE, BRAZIL - JUNE 17TH, 2015



- Capital
- Solimões/Amazonas Rivers
- Codajás - Affected City
- Amazonas State
- Countries
- State
- Flooded Areas

Source: CBRS - Floods
 Acquired: June 17th, 2015
 Acquisition mode: PS
 Configuration: Panchromatic
 Resolution: 3.1 m
 Product Level: Center
 Coordinate System: WGS 1984 UTM Zone 20S
 Copyright: CBRS 2011 - Distributor Airbus Defense and Space

Product ID: generated by CBRS (Brazilian National Risk and Climate Management Center) through the approved International Charter "Space and Major Disasters" - Charter Call ID 214, with images provided by CBRS - Copyright: Floods - © CBRS 2011 - Distributor Airbus Defense and Space. All rights reserved.



This product was generated using digital techniques and requires field verifications. There is no precision stamping in this product

City of Itacoatiara - Amazonas State - Flooded Areas - 17th June 2015'

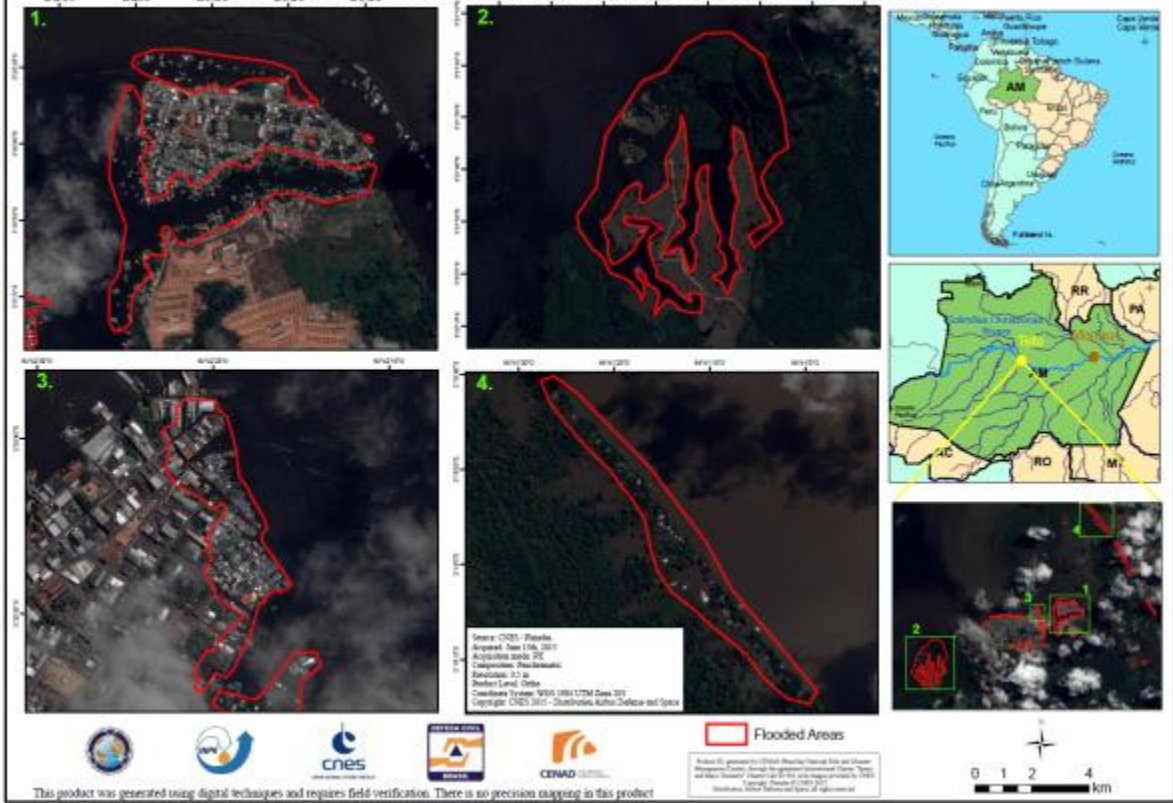


Source: CBRS - Floods
 Acquired: June 17th, 2015
 Acquisition mode: PS
 Configuration: Panchromatic
 Resolution: 3.1 m
 Product Level: Center
 Coordinate System: WGS 1984 UTM Zone 20S
 Copyright: CBRS 2011 - Distributor Airbus Defense and Space

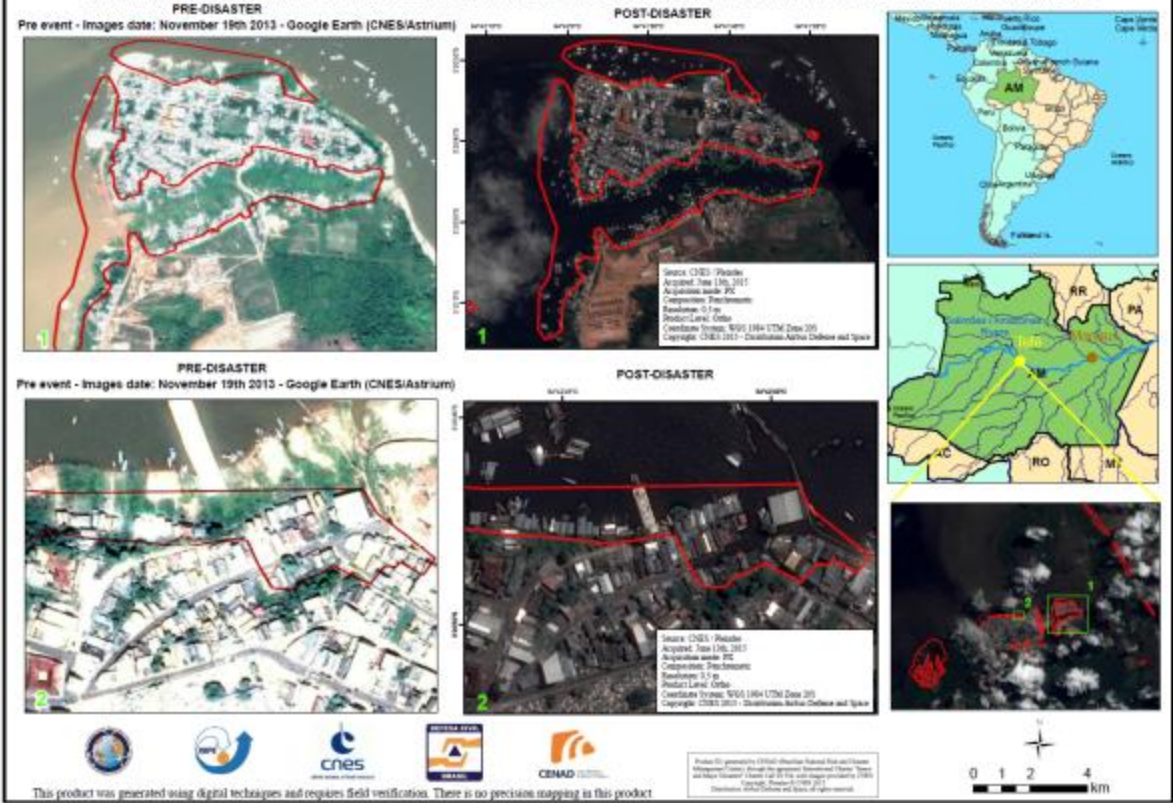
Product ID: generated by CBRS (Brazilian National Risk and Climate Management Center) through the approved International Charter "Space and Major Disasters" - Charter Call ID 214, with images provided by CBRS - Copyright: Floods - © CBRS 2011 - Distributor Airbus Defense and Space. All rights reserved.

This product was generated using digital techniques and requires field verifications. There is no precision stamping in this product

AFFECTED AREAS BY SOLIMOES RIVER FLOODING AT TEFE CITY - AMAZONAS STATE, BRAZIL - JUNE 13TH, 2018



COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMOES RIVER FLOODING AT TEFE CITY - AMAZONAS STATE, BRAZIL - JUNE 13TH, 2018



Cidades de Amatura e Santo Antônio do Ica - Amazonas - Vista Geral das Áreas afetadas - 13 de junho 2015

Cities of Amatura e Santo Antônio do Ica - Amazonas - Affected Areas Overview



Legenda

- Limites Municipais / City Boundaries
- Área Urbana / Urban Area
- Áreas inundadas / Flooded Areas
- Rio regular / Regular River



0 2 4 8 12 16 Kilometers

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Cidade de Jutai - Amazonas - Vista Geral das Áreas afetadas - 13 de junho 2015

City of Jutai - Amazonas - Affected Areas Overview



Legenda

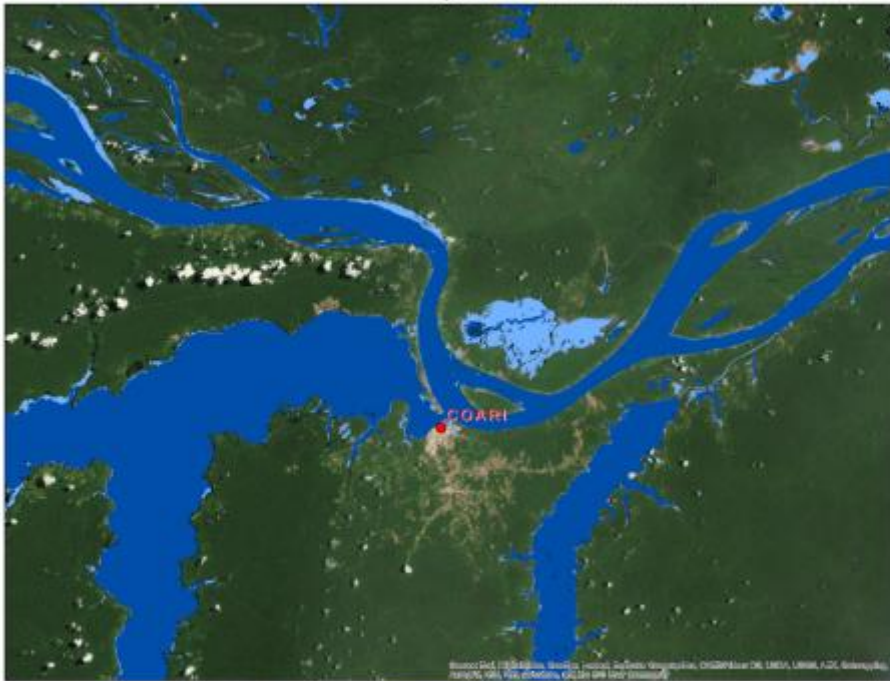
- Limites Municipais / City Boundaries
- Área Urbana / Urban Area
- Áreas inundadas / Flooded Areas
- Rio regular / Regular River



0 2 4 8 12 16 Kilometers

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Cidade de Coari - Amazonas - Vista Geral das Áreas afetadas - 13 de junho 2015
 City of Coari - Amazonas - Affected Areas Overview



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Cidades de Codajás e Anori - Amazonas - Vista Geral das Áreas afetadas - 13 de junho 2015
 Cities of Codajás and Anori - Amazonas - Affected Areas Overview



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Cidade de Tonantins - Amazonas - Vista Geral das Áreas afetadas - 13 de junho 2015

City of Tonantins - Amazonas - Affected Areas Overview



Legenda

- Limites Municipais / City Boundaries
- Área Urbana / Urban Area
- Áreas Inundadas / Flooded Areas
- Rio regular / Regular River



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Cidade de Fonte Boa - Amazonas - Vista Geral das Áreas afetadas - 13 de junho 2015

City of Fonte Boa - Amazonas - Affected Areas Overview



Legenda

- Limites Municipais / City Boundaries
- Área Urbana / Urban Area
- Áreas Inundadas / Flooded Areas
- Rio regular / Regular River



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Cidades de Itapiranga, São Sebastião do Uatuma e Urucara - Amazonas - Vista Geral das Áreas afetadas - 13 de junho 2015
 Cities of Itapiranga, São Sebastião do Uatuma e Urucara - Amazonas - Affected Areas Overview



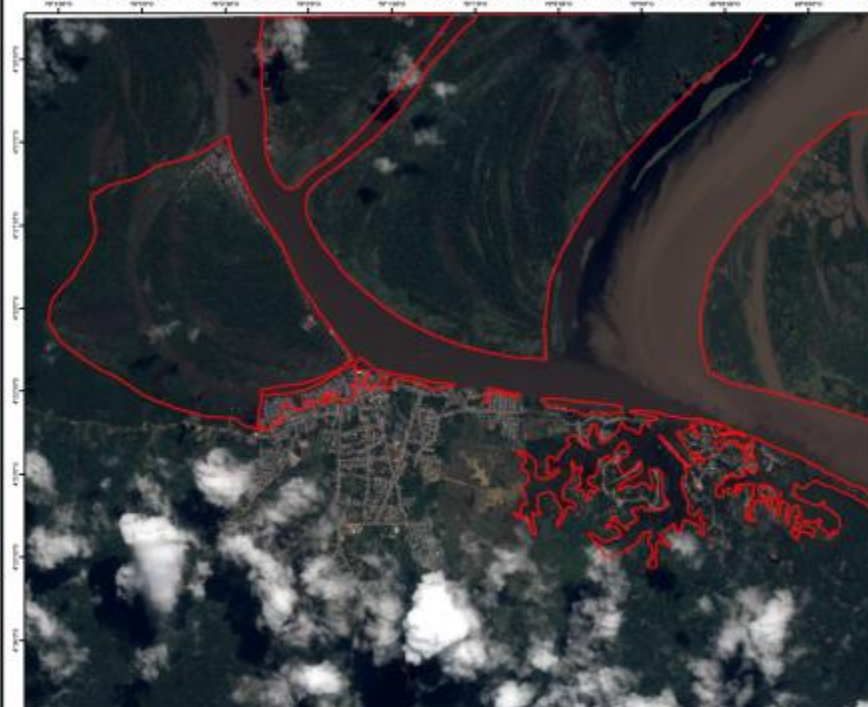
Legenda
 - Áreas Inundadas / City Boundaries
 - Rios Regulares / Regular Rivers
 - Áreas Inundadas / Flooded Areas
 - Rio regular / Regular River



0 2 4 8 12 16 Kilometers

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AFFECTED AREAS BY SOLIMÕES RIVER FLOODING AT BENJAMIN CONSTANT CITY - AMAZONAS STATE, BRAZIL - JUNE 18TH, 2015



Legend
 - Capitais
 - Substâncias Amazônicas Rios
 - Benjamin Constant - Affected City
 - Amazonas State
 - Countries
 - Brazil
 - Flooded Areas

Source: CENAD - Brasília
 Argentina: Terra 1996, 2011
 Argentina: Google Earth
 Composites: Protonic
 Resolution: 3.7 m
 Remote Sensing: DLR
 Coordinate System: WGS 1984 UTM Zone 18S
 Copyright: CENAD 2015 - Distribuição Airbus Defense and Space



0 500 1 000 2 000 m

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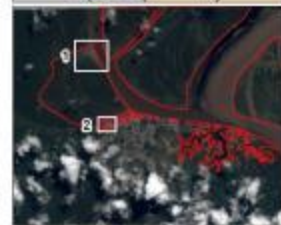
COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMÕES RIVER FLOODING AT BENJAMIN CONSTANT CITY - AMAZONAS STATE, BRAZIL - JUNE 18TH, 2015



PRE-DISASTER
Pre event - Images date: August 19th 2013 - Google Earth (CRES/ASHIR)A



POST-DISASTER



This product was generated using digital techniques and requires field verification. There is no precision mapping in this product.

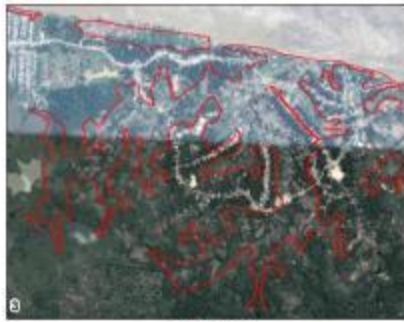
Source: CBDS - Brasília
Acquired: Year 1985, 2013
Aerographic scale: 1:50,000
Contourlines: 10m
Resolution: 30 m
Projection: UTM
Coordinate System: WGS 1984 UTM Zone 18S
Copyright: © 2015 2013 - Distribuição Atlas Defesa e MDT SpA

- Capitals
- State/Provincial Rivers
- Benjamin Constant - Affected City
- Amazonas State
- Countries
- Brazil
- Flooded Areas

0 1.250 2.500 5.000

This product was generated using digital techniques and requires field verification. There is no precision mapping in this product.

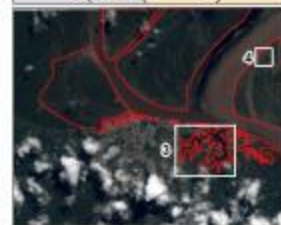
COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMÕES RIVER FLOODING AT BENJAMIN CONSTANT CITY - AMAZONAS STATE, BRAZIL - JUNE 18TH, 2015



PRE-DISASTER
Pre event - Images date: August 19th 2013 - Google Earth (CRES/ASHIR)A



POST-DISASTER



This product was generated using digital techniques and requires field verification. There is no precision mapping in this product.

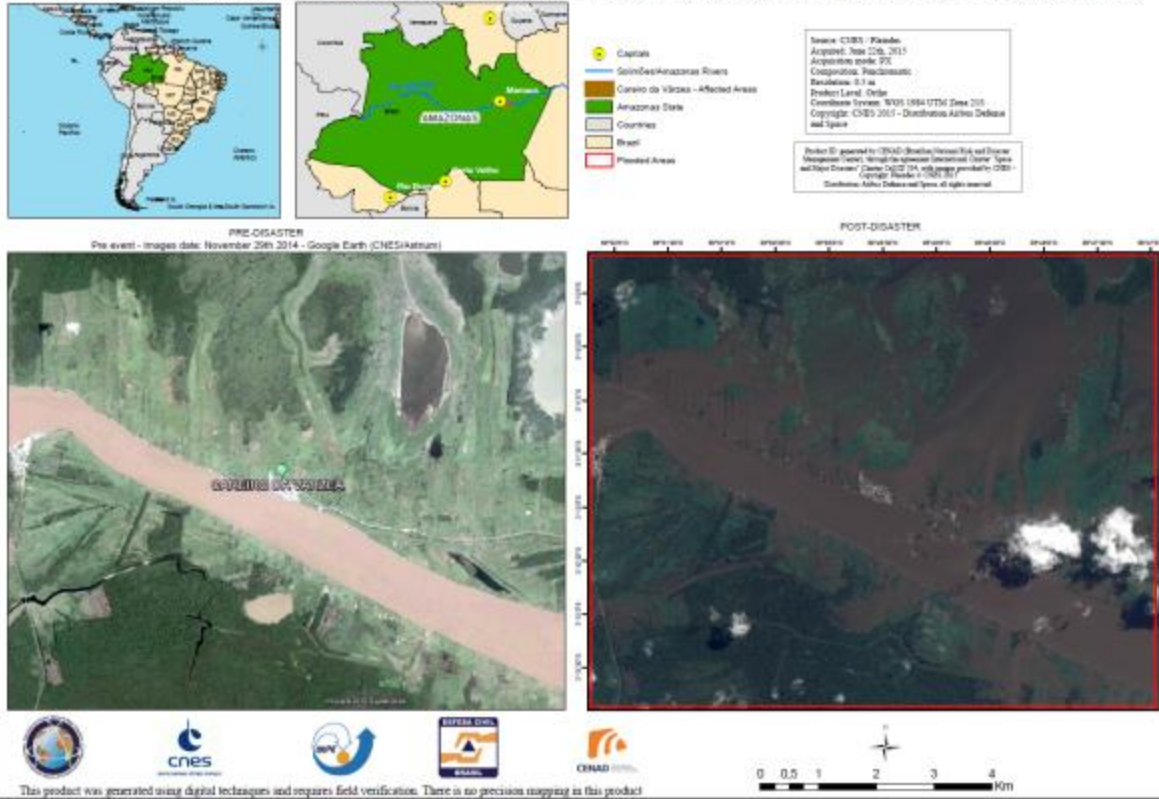
Source: CBDS - Brasília
Acquired: Year 1985, 2013
Aerographic scale: 1:50,000
Contourlines: 10m
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Copyright: © 2015 2013 - Distribuição Atlas Defesa e MDT SpA

- Capitals
- State/Provincial Rivers
- Benjamin Constant - Affected City
- Amazonas State
- Countries
- Brazil
- Flooded Areas

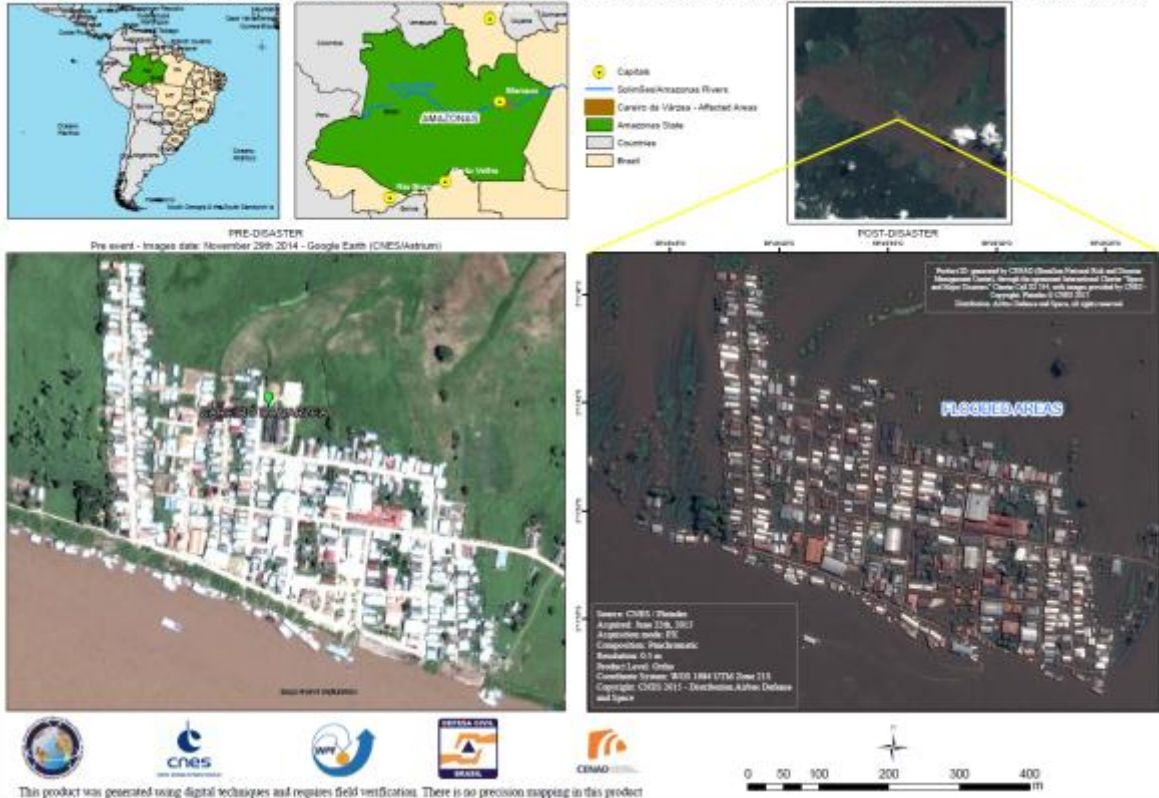
0 1.250 2.500 5.000

This product was generated using digital techniques and requires field verification. There is no precision mapping in this product.

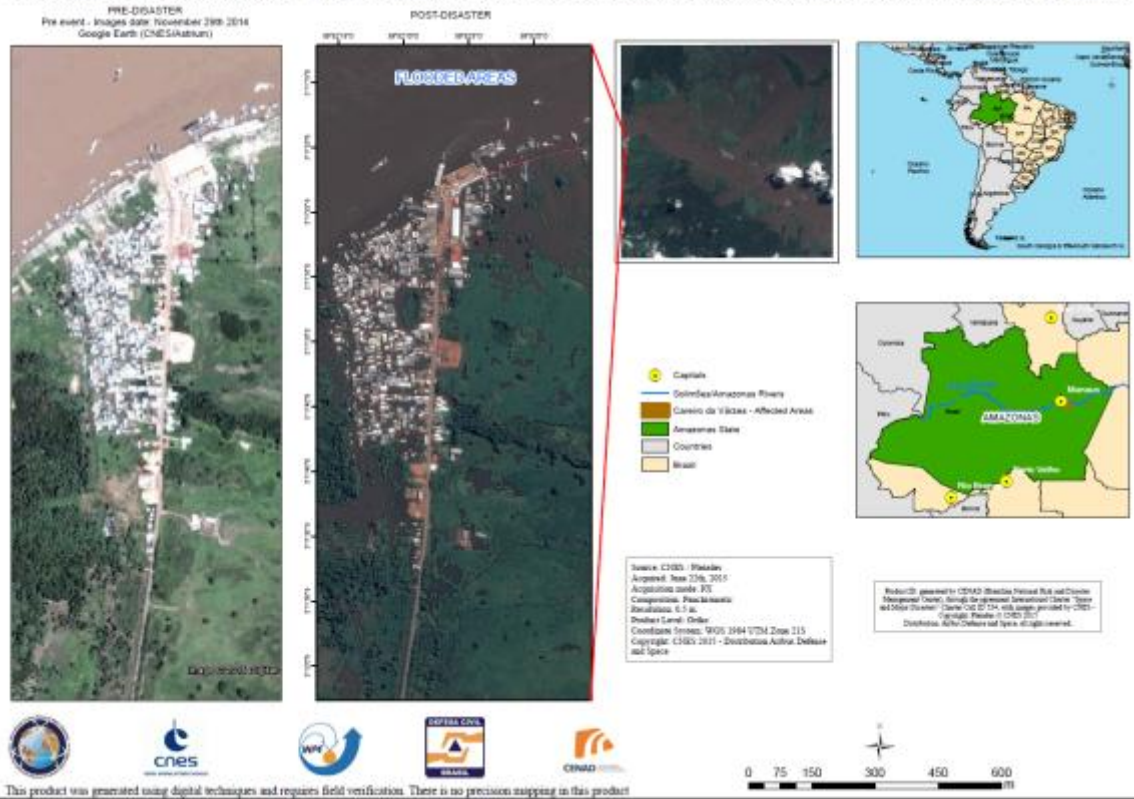
COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMOES RIVER FLOODING AT CAREIRO DA VÁRZEA CITY - AMAZONAS STATE, BRAZIL - JUNE 22TH, 2015



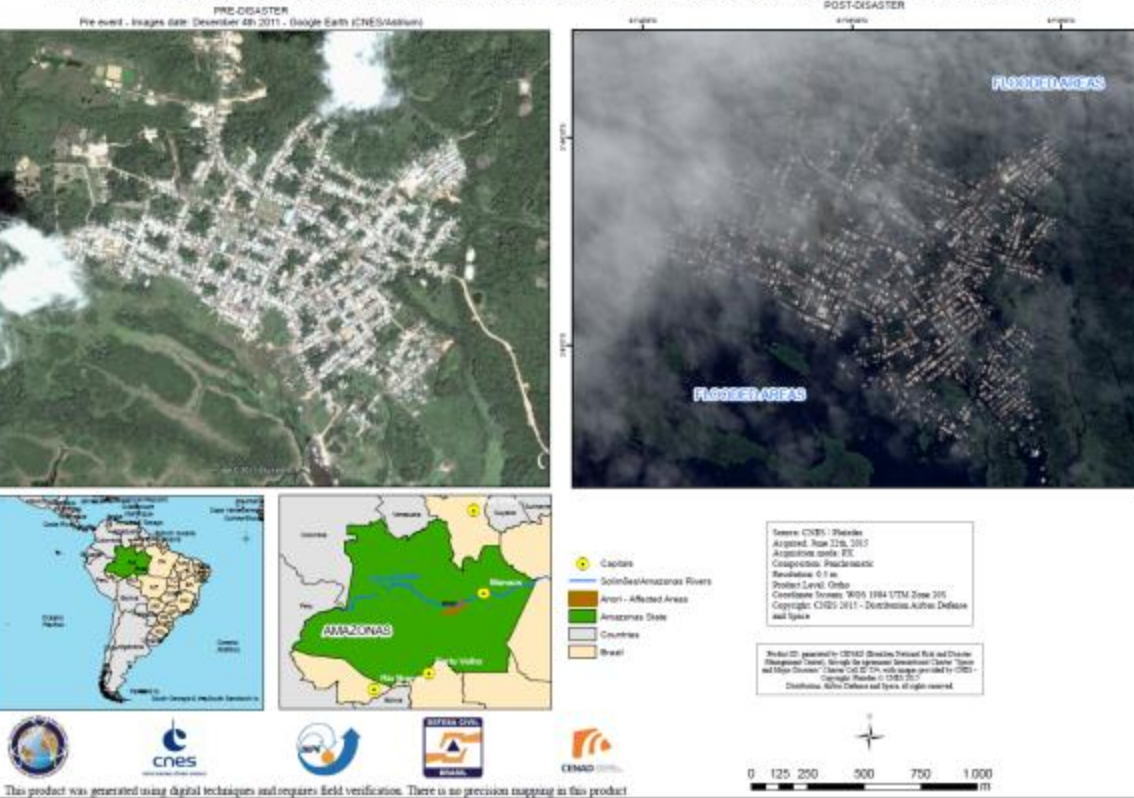
COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMOES RIVER FLOODING AT CAREIRO DA VÁRZEA CITY - AMAZONAS STATE, BRAZIL - JUNE 22TH, 2015



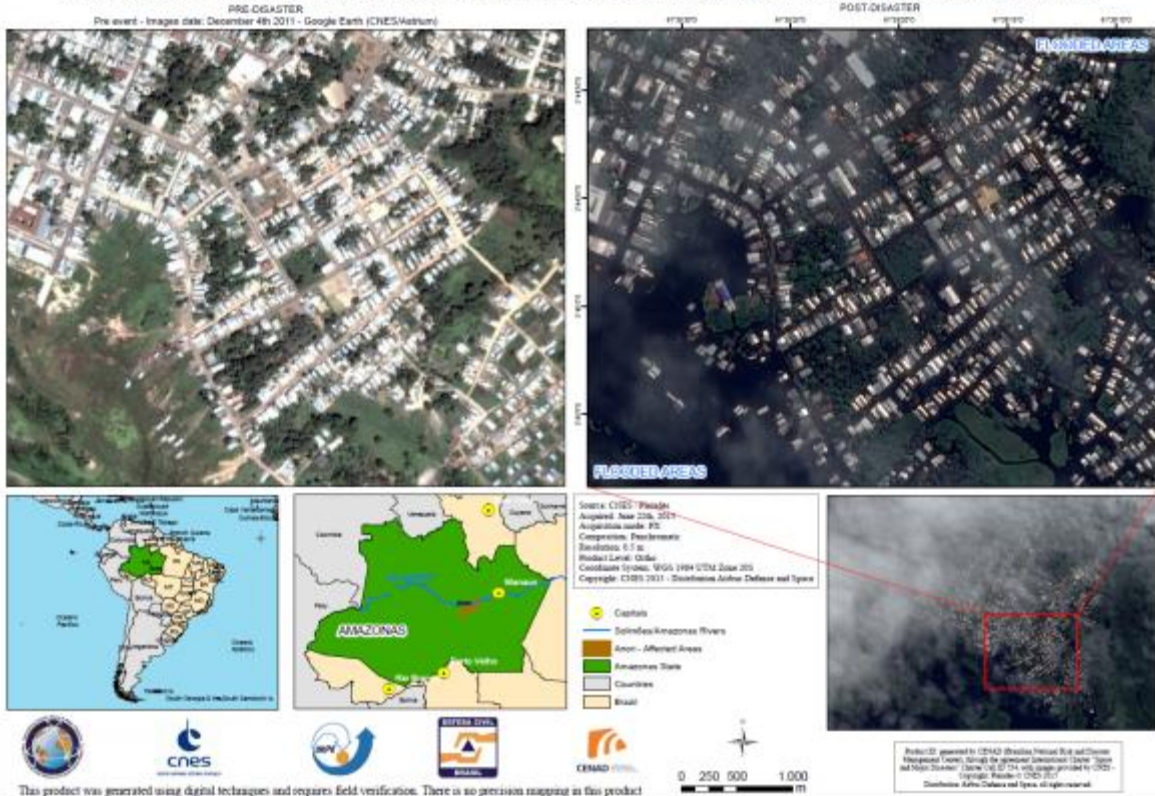
COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMOES RIVER FLOODING AT CAREIRO DA VÁRZEA CITY - AMAZONAS STATE, BRAZIL - JUNE 22TH, 2015



COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMOES RIVER FLOODING AT ANORI CITY - AMAZONAS STATE, BRAZIL - JUNE 22TH, 2015



COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMOES RIVER FLOODING AT ANORI CITY - AMAZONAS STATE, BRAZIL - JUNE 22TH, 2015



Cidades de Parintins - Amazonas - Imagem de 18/06/2015 - Atingimento 14/06/2015
Parintins City - Amazonas



Cidades de Urucurituba- Amazonas - Imagem de 16/06/2015
Urucurituba City - Amazonas



Base Image Source: CNES/Pevidae
Acquired: June 19th, 2015
Acquisition mode: P1
Composition: Panchromatic
Resolution: 3.0m
Product Level: Ortho
Coordinate System: SRS: 1894 UTM Zone 21M

Product ID generated by CENAD (Brazilian National Risk and Disaster Management CENTER) through the agreement International Charter "Space and Major Disasters" Charter Call ID 234, with images provided by CNES.
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COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMÕES RIVER FLOODING AT COARI CITY - AMAZONAS STATE, BRAZIL - JUNE 26TH, 2015

PRE-DISASTER
Pre event - Images date: March 28th 2014 - Google Earth (DigitalGlobe and CNES/Airbus)

POST-DISASTER

PRE-DISASTER
Pre event - Images date: August 20th 2013 - Google Earth (Digital Globe)

POST-DISASTER

This product was generated using digital techniques and requires field verification.
There is no precision mapping in this product.

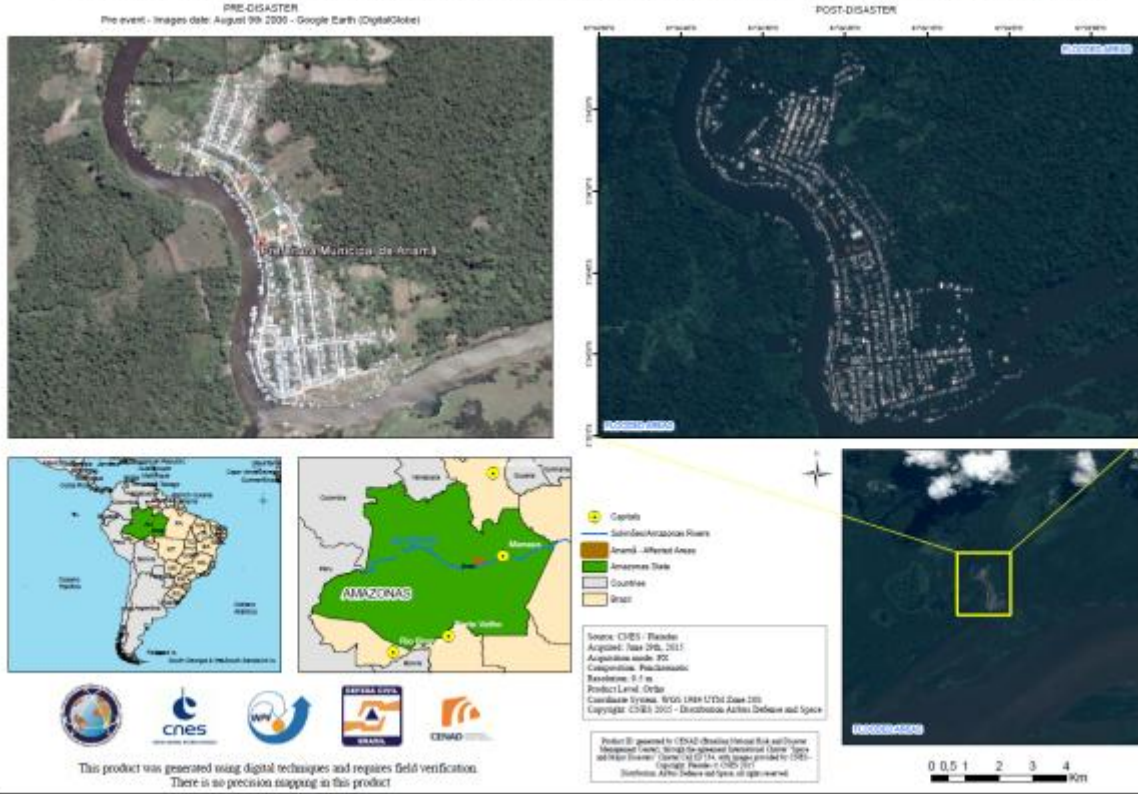
Legend:

- Capitas
- Solimões/Amazonas Rivers
- Clear - Affected Areas
- Amazonas State
- Counties
- Brazil
- Flooded Area

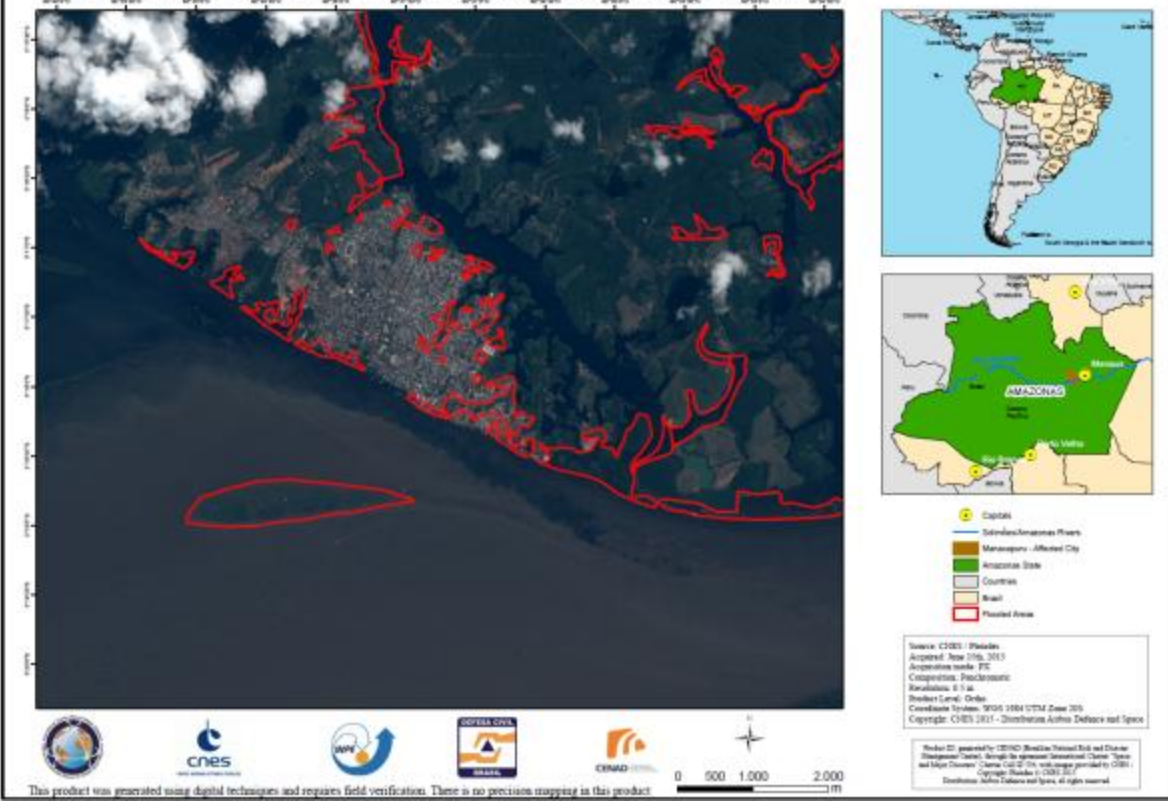
Source: CNES - Pevidae
Acquired: Near 20th, 2013
Composition: Panchromatic
Resolution: 0.3 m
Product Level: Ortho
Coordinate System: SRS: 1894 UTM Zone 20E
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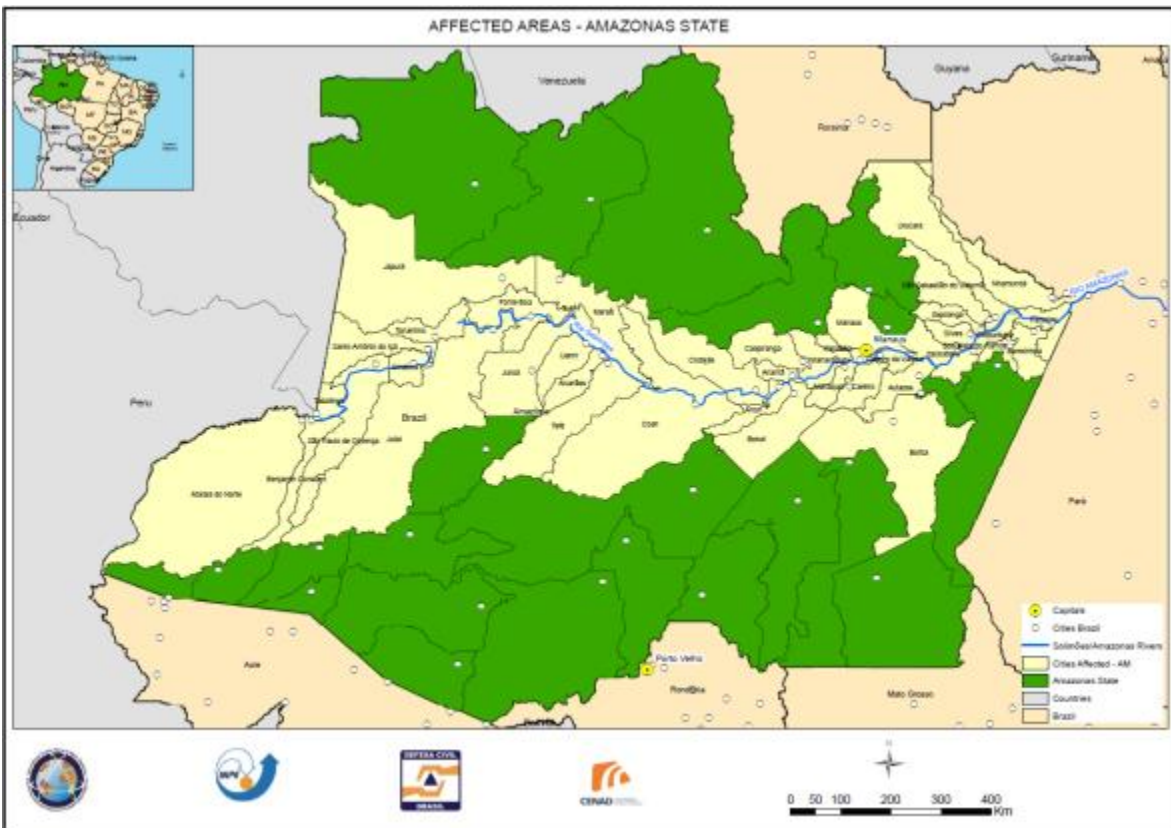
COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMOES RIVER FLOODING AT ANAMÁ CITY - AMAZONAS STATE, BRAZIL - JUNE 29TH, 2015



AFFECTED AREAS BY SOLIMOES RIVER FLOODING AT MANACAPURU CITY - AMAZONAS STATE, BRAZIL - JUNE 15TH, 2015



COMPARING PRE-DISASTER AND POST-DISASTER - AFFECTED AREAS BY SOLIMÕES RIVER FLOODING AT MANACAPURU CITY - AMAZONAS STATE, BRAZIL - JUNE 15TH, 2015



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