



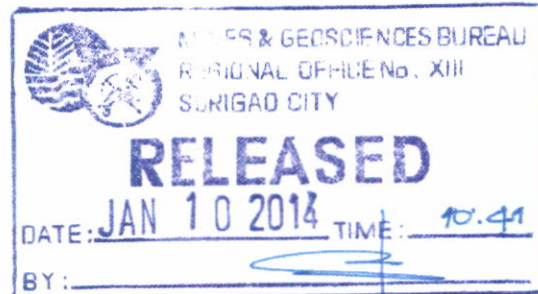
Republic of the Philippines
Department of Environment and Natural Resources
MINES AND GEOSCIENCES BUREAU
 Regional Office No. XIII

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January 9, 2014

RD-G-14-01-09

Honorable Johnmark C. Billanes
 Municipal Mayor
 Municipality of Trento
 Province of Agusan del Sur



Dear Hon. Mayor Billanes,

Respectfully furnishing your end the document entitled "Results of the MGB Landslide and Flood Assessment and Mapping (1:10,000 scale) of the Municipality of Trento, Agusan del Sur". The assessment is in line with the government's effort aimed at reducing, if not totally mitigating the destructive effects and impacts of natural hazards to the populace.

The Office expresses its deep gratitude for the support and assistance rendered to the Geohazard Mapping and Assessment Team of our Regional Office during the conduct of the field survey.

We look forward to a continuing partnership and collaboration with the LGU of Trento, Agusan del Sur in the nation's overall disaster risk reduction program.

Very truly yours,

BY THE AUTHORITY OF THE REGIONAL DIRECTOR:


NOLI N. ARREZA
 OIC, Mine Management Division



GSD-13-01-Ghz-08

Cc: **DIRECTOR, MGB CO**
HON. GOVERNOR, Surigao del Sur
HON. REPRESENTATIVE, 2nd District, SDS
Office of Civil Defense, RDRRMC Carag

REGIONAL EXECUTIVE DIRECTOR, DENR, R-XIII
PENRO, Agusan del Sur
CENRO, Bunawan, ADS
REGIONAL DIRECTOR, DILG-Caraga

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	Barangay Kapatungan	Barangay San Ignacio
	Barangay Langkila-an	Barangay San Isidro
	Barangay Manat	Barangay San Roque
	Barangay New Visayas	Barangay Santa Maria
	Barangay Pangyan	Barangay Tudela



Department of Environment and Natural Resources
MINES AND GEOSCIENCES BUREAU
Regional Office No. 12, Surigao City



TRENTO-ADS-1:10,000 SCALE

41-140110-00093

RESULTS OF THE MGB LANDSLIDE AND FLOOD ASSESSMENT AND MAPPING (1:10,000 SCALE) OF THE MUNICIPALITY OF TRENTO, PROVINCE OF AGUSAN DEL SUR

The Mines and Geosciences Bureau-Department of Environment and Natural Resources (MGB-DENR) conducted landslide and flood assessment and mapping (1:10,000 scale) of areas within the municipality of Trento on October 19, 2013 to November 2, 2013. The assessment is in line with the government's efforts aimed at reducing, if not, totally mitigating the destructive effects and impacts of natural hazards on the populace. Comprising the geohazard assessment team are Joel A. Calugcugan, Melvin A. Mantilla, Elaine L. Galido, geologists from MGB – Caraga Region XIII with the assistance of GSD personnel Mr. Evangelino M. Morales, Jr., Dionesio A. Surigao, Julius A. Sulapas and Samuel A. Jardenil.

The MGB-DENR particularly covered the following areas:

- Puroks 1 to 9 in Barangay Basa
- Puroks 1 to 7 in Barangay Cebolin
- Puroks 1 to 8 in Barangay Cuevas
- Puroks 1 to 15 in Barangay Kapatungan
- Puroks 1 to 9 in Barangay Langkila-an
- Puroks 1 to 8 in Barangay Manat
- Puroks 1 to 6 in Barangay New Visayas
- Puroks 1 to 4 in Barangay Pangyan
- Puroks 1 to 29 in Barangay Poblacion
- Puroks 1 to 12 in Barangay Pulang-Lupa
- Puroks 1 to 9 in Barangay Salvacion
- Puroks 1 to 5 in Barangay San Ignacio
- Puroks 1 to 6 in Barangay San Isidro
- Puroks 1 to 7 in Barangay San Roque
- Puroks 1 to 16 in Barangay Santa Maria
- Puroks 1 to 6 in Barangay Tudela

The assessed areas were rated as having low, moderate, high or very high (critical) susceptibility to landslide. The landslide susceptibility rating parameters are as follows:

Very High : Areas usually with steep to very steep slopes and underlain by weak materials. Recent landslides, escarpments and tension cracks are present. Human initiated effects could be an aggravating factor.

High : Areas usually with steep to very steep slopes and underlain by weak materials. Areas with numerous old/inactive landslides.

Moderate : Areas with moderately steep slopes. Soil creep and other indications for possible landslide occurrence are present.

Low : Gently sloping areas with no identified landslides.

Likewise, the assessed areas were also rated as having low, moderate or high susceptibility to flooding. The flood susceptibility parameters are as follows:

High : Areas likely to experience flood heights of greater than 1.0 meter and/or flood duration of more than 3 days. These areas are immediately flooded during heavy rains of several hours; include landforms of topographic lows such as active river channels, abandoned river channels and areas along river banks; also areas prone to flashfloods

Moderate : Areas likely to experience flood heights of 0.5 to 1.0 meter and flood duration of 1 to 3 days. These areas are subject to widespread inundation during periods of prolonged and extensive heavy rainfall or extreme weather condition. Fluvial terraces, alluvial fans, and infilled valleys are areas subjected to moderate flooding

Low : Areas likely to experience flood heights of less than 0.5 meter and/or flood duration of less than one day. These areas include low hills and gentle slopes. They also have sparse to moderate drainage density

The barangay officials were presented with a *Landslide and Flood Threat Advisory* when appropriate. This advisory informs them of their area's susceptibility to landslides and floods and contains the corresponding recommendations.

Summarized below are the results of the assessment of the covered areas:

Table 1. Results of Landslide and Flood Assessment at Barangay Basa

Purok	Landslide Susceptibility Rating	Flood Susceptibility Rating	Recommendations
1	None	High	The area is underlain by recent alluvial deposits; Construct proper concrete drainage canals and concrete road on this area to facilitate surface run-off ; Identify and construct permanent evacuation site which is safe from flooding and landslide; Prohibit settlement along intermittent/perennial creeks/rivers should be implemented which is prone to flooding; Observed for sunken or displaced road surfaces;

			<p>Develop an early warning (e.g., signages) at (for critical areas only) on steep-slopes where houses situated foot-slopes; Prohibit settlement directly located on foot-slopes; Develop an early warning device/system; Activate BDCC all the time for quick response during emergency; Acquisition of mobile dump trucks and rubber boats are highly recommended for rapid evacuation.</p> <p>Geographic location of Purok 1 situated along Simulao River embankment which is prone to flooding and flash-flood. Concreting of the river-banks and re-channeling are highly recommended. GPS reading is 8°04'13.8"-N/126°03'31.5"-E.</p>
2 Mayniyog	None	High	<p>The area is underlain by recent alluvial deposits; Construct proper concrete drainage canals and concrete road on this area to facilitate surface run-off ; Identify and construct permanent evacuation site which is safe from flooding and landslide; Prohibit settlement along intermittent/perennial creeks/rivers should be implemented which is prone to flooding; Observed for sunken or displaced road surfaces; Develop an early warning (e.g., signages) at (for critical areas only) on steep-slopes where houses situated foot-slopes; Prohibit settlement directly located on foot-slopes; Develop an early warning device/system; Activate BDCC all the time for quick response during emergency; Acquisition of mobile dump trucks and rubber boats are highly recommended for rapid evacuation.</p> <p>Geographic location of Purok 2 "Mayniyog" situated along Simulao River Channel section which is prone to flooding. Concreting of the river-banks and re-channeling are highly recommended. GPS reading is 8°04'41.3"-N/126°04'39.9"-E.</p>
3 Taglubog	None	High	<p>The area is underlain by recent alluvial deposits; Construct proper concrete drainage canals and</p>

			<p>concrete road on this area to facilitate surface run-off ; Identify and construct permanent evacuation site which is safe from flooding and landslide; Prohibit settlement along intermittent/perennial creeks/rivers should be implemented which is prone to flooding; Observed for sunken or displaced road surfaces; Develop an early warning (e.g., signages) at (for critical areas only) on steep-slopes where houses situated foot-slopes; Prohibit settlement directly located on foot-slopes; Develop an early warning device/system; Activate BDCC all the time for quick response during emergency; Acquisition of mobile dump trucks and rubber boats are highly recommended for rapid evacuation.</p> <p>Geographic location of Purok 3 "Taglubog" situated along Simulao River Channel which is prone to flooding and flash-flood. Concreting of the river-banks and re-channeling are highly recommended. GPS reading is 8°04'36.6"-N/126°05'04.2"-E.</p> <p>Construction of proper design of concrete bridge is highly recommended at 8°04'33.6"-N/126°05'13.6"-E. Removed the existing RCP culvert due to regular clogging on this section.</p>
4 Magading	None	High	<p>The area is underlain by recent alluvial deposits; Construct proper concrete drainage canals and concrete road on this area to facilitate surface run-off ; Identify and construct permanent evacuation site which is safe from flooding and landslide; Prohibit settlement along intermittent/perennial creeks/rivers should be implemented which is prone to flooding; Observed for sunken or displaced road surfaces; Develop an early warning (e.g., signages) at (for critical areas only) on steep-slopes where houses situated foot-slopes; Prohibit settlement directly located on foot-slopes; Develop an early warning device/system; Activate BDCC all the</p>

			<p>time for quick response during emergency; Acquisition of mobile dump trucks and rubber boats are highly recommended for rapid evacuation.</p> <p>Geographic location of Purok 4 "Magading" situated within the local slope and adjacent to Bahayan River Channel which is prone to flooding and flash-flood. Concreting of the river-banks and re-channeling are highly recommended. GPS reading is 8°03'49.2"-N/126°03'50.9"-E.</p>
5 Marangan	None	High	<p>The area is underlain by recent alluvial deposits; Construct proper concrete drainage canals and concrete road on this area to facilitate surface run-off ; Identify and construct permanent evacuation site which is safe from flooding and landslide; Prohibit settlement along intermittent/perennial creeks/rivers should be implemented which is prone to flooding; Observed for sunken or displaced road surfaces; Develop an early warning (e.g., signages) at (for critical areas only) on steep-slopes where houses situated foot-slopes; Prohibit settlement directly located on foot-slopes; Develop an early warning device/system; Activate BDCC all the time for quick response during emergency; Acquisition of mobile dump trucks and rubber boats are highly recommended for rapid evacuation.</p> <p>Geographic location of Purok 5 "Marangan" situated along Simulao River Channel which is prone to flooding and flash-flood. Concreting of the river-banks and re-channeling are highly recommended. GPS reading is 8°07'02.2"-N/126°04'37.8"-E.</p>
6 Macauli	None	High	<p>The area is underlain by recent alluvial deposits; Construct proper concrete drainage canals and concrete road on this area to facilitate surface run-off ; Identify and construct permanent evacuation site which is safe from flooding and landslide; Prohibit settlement along intermittent/perennial creeks/rivers</p>

			<p>should be implemented which is prone to flooding; Observed for sunken or displaced road surfaces; Develop an early warning (e.g., signages) at (for critical areas only) on steep-slopes where houses situated foot-slopes; Prohibit settlement directly located on foot-slopes; Develop an early warning device/system; Activate BDCC all the time for quick response during emergency; Acquisition of mobile dump trucks and rubber boats are highly recommended for rapid evacuation.</p> <p>Geographic location of Purok 6 "Macauli" situated along Simulao River Channel which is prone to flooding and flash-flood. Concreting of the river-banks and re-channeling are highly recommended. GPS reading is 8°05'16.2"-N/126°04'16.7"-E.</p>
7 Igang	None	High	<p>The area is underlain by recent alluvial deposits; Construct proper concrete drainage canals and concrete road on this area to facilitate surface run-off ; Identify and construct permanent evacuation site which is safe from flooding and landslide; Prohibit settlement along intermittent/perennial creeks/rivers should be implemented which is prone to flooding; Observed for sunken or displaced road surfaces; Develop an early warning (e.g., signages) at (for critical areas only) on steep-slopes where houses situated foot-slopes; Prohibit settlement directly located on foot-slopes; Develop an early warning device/system; Activate BDCC all the time for quick response during emergency; Acquisition of mobile dump trucks and rubber boats are highly recommended for rapid evacuation.</p> <p>Geographic location of Purok 7 "Igang" situated along Simulao River Channel which is prone to flooding and flash-flood. Concreting of the river-banks and re-channeling are highly recommended. GPS reading is 8°05'03"-N/126°04'08.6"-E.</p>

8 Quarry	None	High	<p>The area is underlain by recent alluvial deposits; Construct proper concrete drainage canals and concrete road on this area to facilitate surface run-off ; Identify and construct permanent evacuation site which is safe from flooding and landslide; Prohibit settlement along intermittent/perennial creeks/rivers should be implemented which is prone to flooding; Observed for sunken or displaced road surfaces; Develop an early warning (e.g., signages) at (for critical areas only) on steep-slopes where houses situated foot-slopes; Prohibit settlement directly located on foot-slopes; Develop an early warning device/system; Activate BDCC all the time for quick response during emergency; Acquisition of mobile dump trucks and rubber boats are highly recommended for rapid evacuation.</p> <p>Geographic location of Purok 8 "Quarry" adjacent to Simulao River Channel which is prone to flooding and flash-flood. Concreting of the river-banks and re-channeling are highly recommended. GPS reading is 8°04'51.6"-N/126°03'54.4"-E.</p>
9 Crossing Maica	None	High	<p>The area is underlain by recent alluvial deposits; Construct proper concrete drainage canals and concrete road on this area to facilitate surface run-off ; Identify and construct permanent evacuation site which is safe from flooding and landslide; Prohibit settlement along intermittent/perennial creeks/rivers should be implemented which is prone to flooding; Observed for sunken or displaced road surfaces; Develop an early warning (e.g., signages) at (for critical areas only) on steep-slopes where houses situated foot-slopes; Prohibit settlement directly located on foot-slopes; Develop an early warning device/system; Activate BDCC all the time for quick response during emergency; Acquisition of mobile dump trucks and rubber boats are highly recommended for rapid evacuation.</p>

			Geographic location of Purok 9 "Crossing Maica" along Simulao River Channel which is prone to flooding and flash-flood. Concreting of the river-banks and re-channeling are highly recommended. GPS reading is 8°04'51.6"-N/126°03'54.4"-E.
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Table 2. Results of Landslide and Flood Assessment at Barangay Cebolin

Purok	Landslide Susceptibility Rating	Flood Susceptibility Rating	Recommendations
Bombil	None	Moderate	Observe for rapid increase/decrease of water level along Simulao River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Simulao River is observed; thus provision of evacuation site which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along Simulao River embankments. For long term solution, relocating the residents affected by much higher flooding is recommended. Activate BDCC at all times.
Daisy (Sitio Boyboy)	Low	Low	Monitor water level along Boyboy Creek. If abnormalities in the water level are observed, pre-emptive evacuation is advised. Provision of evacuation site which is safe from landslide and flooding is also recommended. Activate BDCC at all times.
Gumamela (Tadase)	Low	None	Recommend proper drainage canals to facilitate surface run-off especially during heavy precipitation. Provision of evacuation site which is safe from landslide and flooding is also recommended. Activate BDCC at all times.
Orchids	Moderate	Generally None; portion Low near Pingganon Creek	Observe for presence of mass movements (e.g. landslide, tension cracks). Observe for saturated

			ground and/or seeps. Report such observations at the concerned municipal authorities or to the MGB; for vigilance of the residents located at slopes and foot of slopes during inclement weather conditions. Prohibit future settlement directly located at the foot of slopes. Prohibit future settlement along creeks/river embankments. Provision of evacuation site which is safe from landslide and flooding is also recommended. Recommend proper drainage canals to facilitate surface run-off especially during heavy precipitation. Activate BDCC at all times.
Rosal (Tadase)	Low to Moderate	Generally None; portion Moderate on agricultural area	Observe for presence of mass movements (e.g. landslide, tension cracks). Observe for saturated ground and/or seeps. Report such observations at the concerned municipal authorities or to the MGB; for vigilance of the residents located at slopes and foot of slopes during inclement weather conditions. Prohibit future settlement directly located at the foot of slopes. Observe for rapid increase/decrease of water level along Simulao River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Simulao River is observed; thus provision of evacuation site which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along Simulao River embankments. Recommend proper drainage canals to facilitate surface run-off especially during heavy precipitation. Activate BDCC at all times.
Rose	Moderate	Generally None; portion Low at School site	Observe for presence of mass movements (e.g. landslide, tension cracks). Observe for saturated ground and/or seeps. Report such observations at the concerned municipal authorities or to the MGB; for vigilance of the residents located

			at slopes and foot of slopes during inclement weather conditions. Prohibit future settlement directly located at the foot of slopes. Prohibit future settlement along creeks/river embankments. Provision of evacuation site which is safe from landslide and flooding is also recommended. Recommend proper drainage canals to facilitate surface run-off especially during heavy precipitation. Activate BDCC at all times.
Santan (Tadase)	Low	None	Recommend proper drainage canals to facilitate surface run-off especially during heavy precipitation. Provision of evacuation site which is safe from landslide and flooding is also recommended. Activate BDCC at all times.

Table 3. Results of Landslide and Flood Assessment at Barangay Cuevas

Purok	Landslide Susceptibility Rating	Flood Susceptibility Rating	Recommendations
1 (Cadena de Amor)	Low	Low	Provision of concrete line canals is recommended to facilitate surface run-off during heavy precipitation. Provision of evacuation site which is safe from landslide and flooding is also recommended. Activate BDCC at all times.
2 (Rosal)	Low	Low	Observe for rapid increase/decrease of water level along Tagsaong creek possibly accompanied with increased turbidity (soil content). Prohibit future settlement towards the creek embankments. Provision of concrete line canals is recommended to facilitate surface run-off during heavy precipitation. Provision of evacuation site which is safe from landslide and flooding is also recommended. Activate BDCC at all times.
3 (Rosal)	Low	Low to Moderate	Observe for rapid increase/decrease of water level along Tagsaong creek possibly accompanied with increased turbidity (soil content). Prohibit future settlement towards the creek embankments. Relocation of the residents located at Tagsaong Creek embankments and are affected by the creek's overflow during heavy rainfall is recommended. Provision of

			concrete line canals is recommended to facilitate surface run-off during heavy precipitation. The barangay is recommended to provide an evacuation site which is safe from landslide and flooding. Activate BDCC at all times.
4 (Duranta)	Low	Low Moderate	Observe for rapid increase/decrease of water level along Bahayan River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Bahayan River is observed; thus provision of evacuation sites which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along Bahayan River embankments. Relocating the residents located along the Bahayan River and are at risk of scouring progression is recommended. Construction of flood protective structure along Bahayan River is also an option to arrest scouring. Provision of concrete line canals is recommended to facilitate surface run-off during heavy precipitation. Activate BDCC at all times.
5 (Gumamela)	Low	Low to Moderate	Observe for rapid increase/decrease of water level along Bahayan River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Bahayan River is observed; thus provision of evacuation sites which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along Bahayan River embankments. Provision of concrete line canals is recommended to facilitate surface run-off during heavy precipitation. Activate BDCC at all times.
6	Low	Low	Provision of concrete line canals is

(Bagras)			recommended to facilitate surface run-off during heavy precipitation. Provision of evacuation site which is safe from landslide and flooding is also recommended. Activate BDCC at all times.
7 (Everlasting)	Low to Moderate	Low (but with scouring)	Observe for presence of mass movements (e.g. landslide, tension cracks). Observe for saturated ground and/or seeps. Report such observations at the concerned municipal authorities or to the MGB; for vigilance of the residents located at slopes and foot of slopes during inclement weather conditions. Prohibit future settlement directly at the foot of slopes. Observe for rapid increase/decrease of water level along Bahayan River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Bahayan River is observed; thus provision of evacuation sites which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along Bahayan River embankments. Rechanneling of the Bahayan River is recommended. Reconstruction of flood protective structure along bahayan river is also recommended. For relocation of the residents located at the Bahayan River embankments. Provision of concrete line canals is recommended to facilitate surface run-off during heavy precipitation. Activate BDCC at all times.
8 (Bagong Silang)	None	Low	Recommend a proper culvert along Ubian Creek to prevent the creek from overflowing towards the barangay road going to Purok 8 Bagong Silang. Provision of evacuation site which is safe from landslide and flooding is also recommended. Activate BDCC at all times.
Proposed Relocation Site (Purok 7)			Proposed relocation site is subject for detailed mapping and/or Geohazard Identification Report

Everlasting) 8°00'56.4"N/ 126° 06'28.4"E		(GIR).
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Table 4. Results of Landslide and Flood Assessment at Barangay Kapatungan

Purok	Landslide Susceptibility Rating	Flood Susceptibility Rating	Recommendations
1	None	High	Observe for rapid increase/decrease of water level in Simulao River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Simulao River is observed; thus provision of evacuation sites which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along river/creeks embankments. Prohibit settlement on areas with much higher flooding along the rice fields. Recommend to install proper concrete drainage canals to facilitate surface run-off. The barangay should acquire rubber boats and/or mobile trucks for rescue operation purposes. Activate BDCC at all times.
2	None	High	Observe for rapid increase/decrease of water level in Simulao River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Simulao River is observed; thus provision of evacuation sites which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along river/creeks embankments. Prohibit settlement on areas with much higher flooding along the rice fields. Recommend to install proper concrete drainage

			canals to facilitate surface run-off. The barangay should acquire rubber boats and/or mobile trucks for rescue operation purposes. Activate BDCC at all times.
3	None	High	Observe for rapid increase/decrease of water level in Simulao River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Simulao River is observed; thus provision of evacuation sites which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along river/creeks embankments. Prohibit settlement on areas with much higher flooding along the rice fields. Recommend to install proper concrete drainage canals to facilitate surface run-off. The barangay should acquire rubber boats and/or mobile trucks for rescue operation purposes. Activate BDCC at all times.
4	None	High	Observe for rapid increase/decrease of water level in Simulao River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Simulao River is observed; thus provision of evacuation sites which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along river/creeks embankments. Prohibit settlement on areas with much higher flooding along the rice fields. Recommend to install proper concrete drainage canals to facilitate surface run-off. The barangay should acquire rubber boats and/or mobile trucks for rescue operation purposes. Activate BDCC at all times.
5	None	High	Observe for rapid increase/decrease

			of water level in Simulao River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Simulao River is observed; thus provision of evacuation sites which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along river/creeks embankments. Prohibit settlement on areas with much higher flooding along the rice fields. Recommend to install proper concrete drainage canals to facilitate surface run-off. The barangay should acquire rubber boats and/or mobile trucks for rescue operation purposes. Activate BDCC at all times.
6	None	High	Observe for rapid increase/decrease of water level in Simulao River possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-emptive evacuation is recommended when advised during extreme weather events or abnormalities in water level along Simulao River is observed; thus provision of evacuation sites which is safe from landslide and flooding is highly recommended. Strictly prohibit settlement along river/creeks embankments. Prohibit settlement on areas with much higher flooding along the rice fields. Recommend to install proper concrete drainage canals to facilitate surface run-off. The barangay should acquire rubber boats and/or mobile trucks for rescue operation purposes. Activate BDCC at all times.
7	None	High	Observe for rapid increase/decrease of water level in Lucad Creek possibly accompanied with increased turbidity (soil content). Develop an early warning system and flood preparedness plan thru periodic conduct of evacuation drills. Pre-