

CHAPTER 1

FRAMEWORK

The Municipality of Claver's role in the regional development is now geared towards mining industry development. It can boost vital regional scale economic activities for its mining industry.

Claver is now on verge of becoming a major settlement area due to its mining industry now on its full swing after the proclamation of the area as Special Economic Zone for Mining under Philippine Economic Zone Authority (PEZA).

To complement the increasing demand for food in anticipation of projected influx of population brought by the mining industry, the agriculture sector is mandated to sustain, if not, to double its production is a great challenge on the part of the local government considering the limited agricultural land now being tilled and the other demand for urban development such as shelter and others. The major crops produced in the area are coconut, rice, root crops and other high value crops such as watermelon. The municipality is one of the major producers of watermelon which does not only supply the province but including the neighboring provinces. Meanwhile, its long coastline and vast waters is home to various marine resources is also challenged by the impact in the upland area that cause siltation directly or indirectly being discharged to the sea which affect the coastal areas.

RATIONALE FOR PLAN REVISION

The Local Government of Claver with its thrust of becoming a globally competitive in terms of **mining and sustainable agri-fishery** is pushing to become a livable city in the next 10 years. Through this and with the onset of climatic changes it is but timely to update the existing Comprehensive Land Use Plan with the integration of Disaster Risk Reduction and Climate Change Adaptation. Taking into considerations the PNoy social contract which is inclusive growth focusing on the five crosscutting key strategies: *(a) boosting competitiveness to generate employment; (b) improving access to financing; (c) investing massively in physical infrastructure; (d) promoting transparent and responsive governance; and (e) developing human resource through improved social services.*

The plan will also seek to overcome the constraints to the growth of the municipality and will have to take advantage of the development opportunities for the municipality's growth in the realization of the desired future scenario of Claver.

CHAPTER 2

PHYSICAL DEVELOPMENT CHALLENGES

Claver is a second class municipality in the province of Surigao del Norte. It is bounded to the north by Becebos Bay, to the west by the Municipality of Gigaquit, and to the south by the Municipality of Carrascal, Province of Surigao del Sur. It is approximately 60 kilometers southeast of the provincial capital, Surigao City. The town can be reached by bus, van-for-hire and jeepney from the Surigao Integrated Bus & Jeepney Terminal or at any point in the national highway. The municipality is the largest in the province in terms of land area at **33,692.13 hectares**. However, a large part the area is classified as mining reservation area of **17,387.52 hectares**.

The municipality of Claver in the province of Surigao del Norte is situated along the eastern seaboard, making it familiar to various weather disturbances ranging from tropical depression to low pressure areas to inter tropical convergence zones to monsoon rains bringing prolonged heavy rainfall in the area.

To date, it has been noted that occurrence of flooding in the municipality reaches record-high ranges from knee to chest level. Such natural occurrence is most experienced during the northeast monsoon (*amihan*) months of November until February where heavy rains and high tides simultaneously happen. Scouring of riverbanks and up dwelling of seashores put the life and property in danger especially those who reside near these areas.

2.1 Urban Land Use

2.1.1 *Residential Land Use*

One of the major settlements in the municipality is within the Poblacion (central areas in Brgy. Bagakay and Brgy. Tayaga). The spill-over of this development would need enough residential units that would suffice the demand. Currently, settlements along the primary and secondary roads in the Poblacion are building-up. Residential uses are now mixing up with commercial use especially in the Davao-Surigao coastal road and some residential units are converted into commercial establishments which also blocking the access of those property considered as second lot depth.

Settlements in the Poblacion is bounded by Samontina Street in the east up to St. Peter street intersection going to Garcia Street turning Quirino Street and bounded by Clarin Street southwards up to the public market going to Garcia Street intersecting Honrado Street and going back to Samontina Street. Other blocks of residences on the western side of the Poblacion which starts from Mariano street

on the south going to St. Peter street intersecting Quezon street up to the seawall on the north intersecting Ocon Street to the west up to Honrado Street southwards and going back to Samontina Street. Meanwhile, urbanizable barangays like, Daywan, Hayanggabon and Taganito establish their residences along highways and secondary roads.

A total of 22.60 hectares of land is being allotted for residential use in urban areas. But due to limited flat and buildable land, some residents resort to building or are about to build their houses in critical locations especially along the national roads and coastal areas. These said encroachment includes road rights of way, riverbanks and river easements, open spaces and environmentally-critical areas that are off limits to human settlements. Uncontrolled built-ups of dwellings proliferating these urban areas may cause due hazards on the part of the local folks health condition and risk of life and property.

A proposed resettlement site in Dojong, Brgy.Ladgaron with an area of approximately 20 hectares has been identified. Physical characteristics of the site may impose limitations due to slopes and terrains; therefore an early analysis of site data and conditions should be undertaken in order to ascertain and evaluate such limitations. The need for thorough initial investigation and continuing review for conformance with controls imposed by zoning and other codes cannot be overemphasized.

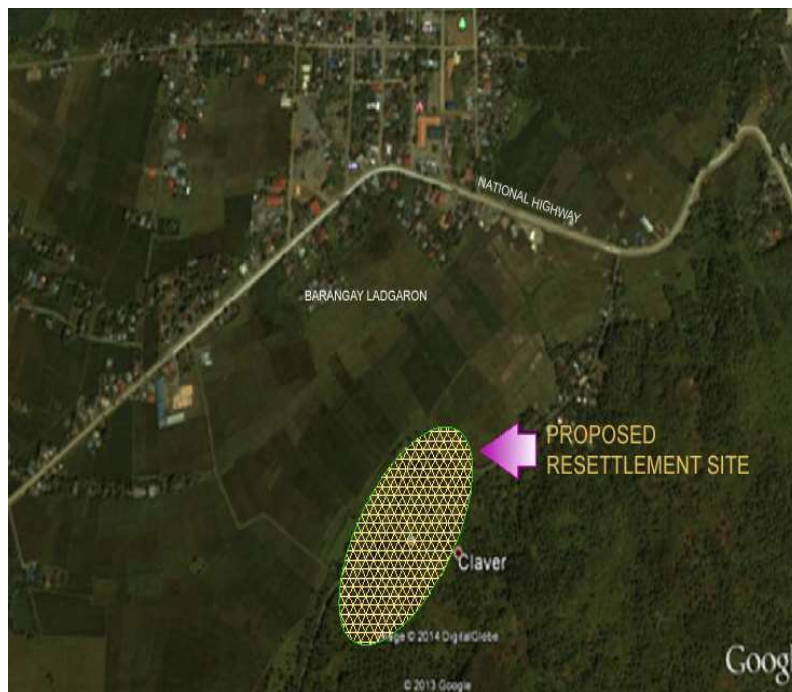


Figure 1:A 20 hectare resettlement site in Dojong, Ladgaron

Development patterns and trend extensions suggest there will be a need for additional housing for the coming years. Currently, there is a sufficient land area within the Municipality's boundaries to accommodate the land area needed for residential growth. Inclusion on the zoning ordinance regarding the conversion of agricultural lands to residential use must be prioritized. To date, some household owners erect their residences within the agricultural zones without undergoing the process of reclassification or conversion. Uncontrolled construction of structures anywhere according to their own preferences and convenience.

2.1.2 Commercial Land Use

A total of 333 business establishments were issued business permits in 2009 and small establishments like *sari-sari* stores recorded the most numbered followed by general merchandise and fish vending. A commercial center for dry goods was established in 2008 near the terminal and public market located at Brgy. Tayaga. The center has forty three (43) units of stalls which are leased to business operators. The influx of mining industries and other economic activities pushed the local government unit to invite lending institutions, communication service providers, banks, pawnshops, cargo forwarders/couriers to invest in the locality. Lodging houses, *carenderias*, snack bars, bakeries, internet cafes, beauty salons, barber shops and sing-along bars/entertainment bars were also established.

With this growing business environment, it is observed that attracting more investments in the countryside could trigger economic activities. Hence, appropriate policies and economic directions are needed to be formulated such that conducive climate for inflow of business investments will be gradually fashioned in the locality. Local officials has to continue efforts of attracting much needed investors that will utilize local resources and transform rural communities into vibrant entities creating products and employment opportunities.

Commercial Use in the Poblacion bounded St. Peter in the North corner of Clarin to east; SamontinaStreet going to the National Highway to the South, bounded by Ladgaronto the west up to the corner of Honrado up to Mariano Street intersection. Brgy. Taganito also considered urbanizing barangay due to its services provided to the neighboring barangays such as: Rural Banks, Lending Institutions, Pawnshops, Barangayhealth station with complete facilities, water purifying laboratory, lotto outlet, grocery stores & other commercial activities. Brgy.Hayanggabonis also considered an urbanizable barangay due to population density, with barangay wharf which cater the passengers from and to Bucas Grande Island. Presence of Trading Post, Beaches, Bakeries, Money Padala Station, Seafood Restaurants and other commercial activities. Barangay Ladgaron also considered as urbanizing barangay due to its commercial services such as;

Private Hospital with laboratory facilities, Funeral Parlor, Pension Houses, Padala Services, Recreation Center and other businesses.

Most of the commercial establishments along the national highway strip did not conform with the DPWH set back requirements and road right of way. Mixed used development has been observed in these areas.

2.1.3 Industrial Land Use

Major production of hollow blocks supply in the locality comes from Brgy. Tayaga at Lawihon Street and Honrado Street. Rice Mills were also available in Purok 7 in Brgy. Tayaga, Magsaysay Street in Brgy. Ladgaron and National Highway. However, some of these structures are located within the residential areas and has to be transferred to a designated industrial zone.

Low elevation and lack of proper drainage along these areas makes it susceptible to flooding especially during heavy rains and bad weather conditions which can eventually lead to disruption of production activities.

2.1.4 Institutional Land Use

Claver has two (2) educational levels available. All 14 barangays comprising the municipality has one elementary school. The Claver National High School is located in Brgy. Tayaga (Poblacion West) being served daily by a school bus has a satellite campus in Barangay Taganito now being separated as Taganito National High School (formerly CNHS Annex) caters the four (4) mining communities of Brgy. Urbiztondo, Brgy. Taganito, Brgy. Hayanggabon and Brgy. Cagdianao. Primary and elementary education are served in two (2) barangays. Brgy. Bagakay has also three (3) Kindergarten School and one (1) Day Care Center. There are also one (1) elementary school, two (2) primary schools, one (1) kindergarten school and one (1) daycare center in Brgy. Tayaga. One primary school located in Sitio Sabang is prone to storm surges and continues to experience scouring. These areas in Brgy. Tayaga are also vulnerable to flooding particularly during the wet seasons from November to February. Heavy flooding can be experienced in this school sites even during monsoon season; hence, increases in rainfall aggravated by the climate change and typhoons can worsen damages.

Government institutions are concentrated in Brgy. Tayaga like Municipal Hall which bounded by Clarin St. on West, Garcia St. on East, PNP Station, BFP Station, Legislative Building, Rural Health Unit Building with Tuberculosis Directly Observed Treatment Strategy (TBDOTS) and Birthing Clinic, two (2) Women's Centers, Agriculture Office and Disaster Operation and Evacuation Center are being grouped within blocks for easy access to government transactions.

2.2 Rural Land Use

2.2.1 Residential Land Use

In fourteen(14)barangays of Claver, four(4) are being considered urbanizable and eight(8) are considered rural areas to which some being less developed and located in the remote and outskirts portions of the municipality. Distribution and access to basic services and economic growth could be difficult in some of these areas. Most family dwellings are arranged in linear form according to the actual road networks and water bodies such as rivers and creeks and along coastlines. Residential growth center usually settle on institutional and government structures.

SAPA

Barangay Sapa is a very remote barangay since it is located at the highlands with the distance of seven (7) kilometers from the Poblacion. Farming is the main source of living owing to a large prime agricultural land. Some of the residential dwellings have no building permits with most of the residents are not well aware of R.A. 1096 known as the National Building Code of the Philippines. Permitting continues to be a challenge to the authorities. Most of the houses are made only of indigenous materials taken from within the forest nearby. The natural terrain and slopes surrounding the area could trigger the occurrence of local landslides. The lack of maintenance in the provincial road towards downtown area could hinder the delivery of goods in going to the Poblacion. A resolution by the local Sanggunian to maintain and improve the provincial road has to be passed. At present, Gigaquit and Claver has territorial conflicts involving Brgy. Sapa; however, both municipalities are on the process of settling the conflict.

LAPINIGAN

Barangay Lapinigan is located away from Poblacion, approximately five (5) kilometers from the mainland. The main source of living is fishing both capture and culture. Most houses are built with light materials like bamboos and other indigenous materials. It can be a potential tourist destination being the only island barangay in the municipality. Coastal erosion is one of the hazards but its vulnerability is low since the Barangay proper is protected by seawalls. Construction of breakwater can protect the concrete road along the coast since it is prone to storm surge. Likewise, some roads are already damaged resulting from sediment being washed away by waves. Poor construction was also observed which causes the

decay of the road. It basically sits on top of the beach materials which could easily be washed away by tides especially during bad weather conditions.

WANGKE

Barangay Wangke is approximately four (4) kilometers from the Poblacion. One of the coastal barangays with the largest mangrove area approximately at 30 hectares. The main source of living is fishing and farming. Most of the houses are made of mixed-use materials such as concrete and timber. Based on MGB report, Barangay Wangke has a low to moderate susceptibility to flooding. Severe siltation and scouring are observed along Wangke River. Isolated landslide along the national highway was also experienced. The river bed is already very shallow not only from sediment accumulation but also as a result of the significant amount of garbage dumped in the river. Obviously, the residents are using the river for waste disposal purposes.



Figure 2: mangroves at the mouth of Wangkeriver

At the mouth of Wangke River, it was found out that the flow of water is already being choked by a spreading mangrove forest. Decreased river flow result to siltation and scouring. It is possible that the problem originated here and worsened by the apparent ignorance and insensitivity of people residing near the river. MGB recommends the following:

- *Cutting of mature mangrove and replanting of the premature ones in suitable sites.*

- *Dredging of river bed where necessary. Manual dredging could be employed along the shallow parts of the river.*
- *To mitigate scouring, riprap in the form of stacked sandbags was recommended.*
- *Conduct IEC on cause of flooding to make the people aware that throwing garbage on the river will worsen the flooding problem. The residents assistance could also be solicited to ensure that the river will no longer be a garbage dump.*
- *Enact a barangay regulation prohibiting people from using the river for disposal of wastes and penalize violators with one (1) day community service in the form of river clean-up. A reasonable incentive provision for informers be a sufficient deterrent as the people will know that their neighbors could inform on them if they violate.*

CABUGO

Barangay Cabugo is one (1) kilometer from Barangay Wangke with almost the same situation in terms of the location. The source of living in this place is also fishing and farming. Seventy percent (70%) of the houses are made of mixed- used materials, they also have mangroves planted in riverside.

Based on MGB report, the geohazards identified in Barangay Cabugo are flooding and scouring along Cabugo River.

Flooding in Barangay Cabugo result from the overflow of Cabugo River. Usually the river overflows because it could not drain the water quickly enough. There are several reasons: 1) *uncommonly heavy rains* 2) *reduced drainage capacity* and 3) *dam failure*. In Barangay Cabugo, flooding occurs because the river is heavily silted and its mouth is being progressively choked by the encroaching mangrove forest. Flooding will persist and worsen until the riverbed is dredged and the river mouth is unclogged of the oppressive mangrove growth.

Scouring in Cabugo River does not only result to siltation, it also threaten destroy segments of the access road. A farm to market project is already up for implementation as the needed funding is already sourced. This project intends to convert the rough access road to a paved equivalent.

Dredging of the riverbed and riverbank stabilization efforts like construction of ripraps made up of boulders and sand bags as well as restoring bank vegetation are the recommended mitigation measures to mitigate flooding. Bamboo and other suitable plants should strengthen the riverbank to enable it to resist erosion.

To prevent riverbank erosion from causing the access road to collapse, the recommendation was that some of the funds earmarked for the farm to market road project be redirected for the construction of riprap along the banks advancing towards the road. Constructing the farm to market road would be illogical without ensuring that it will last long. The existing hazard has to be mitigated so as to protect the proposed structure.

URBIZTONDO

Barangay Urbiztondo is the next Barangay from Cabugo following the Davao-Surigao coastal road. It is one (1) of the mining barangays of the Municipality. Reclamation area is developed in the nearby seashore to cater the increasing population and employment from mining to which is their main source of living. Houses were made mostly of concrete and only few were made of indigenous materials. Problem encountered were landslides, flooding and coastal degradation resulting from the considerable volume of lateritic soil flowing out of Urbiztondo River.

Landslide usually occurs when there is heavy rain. Residential houses are all prone to landslide because they are located at nearby river and hillside. Also, one (1) problem is the mud flow coming from the stockpile of Taganito Mining Corporation (TMC). Proper benching, slope protection at hillside and dredging at rivers are the main solutions to overcome such disaster, by this means, loss of life and damage to properties can be protected.

MAGALLANES

Barangay Magallanes is a low lying barangay bounded by bodies of water. The sea to the north and Baoy and Magallanes Rivers on the other directions. Houses are mostly made of indigenous materials and farming and fishing are the main source of living. Heavy rains result to overflowing of the surrounding rivers thereby flooding the entire barangay. Most of the residents have to be rescued every time there is a storm or continuous heavy rain. Some were able to evacuate on foot via Magallanes Bridge and still some own boats and escaped by way of the sea. The need for residents to leave the barangay to find any suitable evacuation site makes Magallanes Bridge a very valuable structure.

The identified geo-hazard of MGB in Barangay Magallanes is flooding associated with the overflow of the two (2) rivers bounding it. The rivers overflow easily because of the severe siltation observed along most rivers in the entire Municipality of Claver. There are different types of floods depending on duration and location. What happened in Barangay Magallanes on Feb. 2, 2011 could be classified as **flashflood** according to duration and **river flooding** according to location.

Flash floods are the most dangerous kind of flood because they combine destructive power with incredible speed and unpredictability.

To mitigate flooding, recommended mitigation measures included dredging of the riverbed and riverbank stabilization efforts like construction of ripraps made up of boulders and sand bags as well as restoring bank vegetation. Bamboo and other suitable plants should strengthen the riverbank once a significant root system is established.



Figure 3: *Bamboo species recommended for riverbank stabilization*

PANATAO

Barangay Panatao is located two (2) kilometers from Claver. It is also a coastal Barangay but the main source of living is employment. A proposed solid waste disposal of the municipality will be established soon at the mountainous area of this Barangay. Ninety percent (90%) of the residential houses are made of concrete. In the barangay proper, a thick mangrove growth and houses constructed beyond the coastline.

In Sitio Usok, near the mouth of Usok creek, coastal erosion was reported. Erosion occurs during bad weather but normal weather allows the beach to recover and the sea retreats to its normal position.

In Tagbanakan, a significant sea scour occurred in 2009 just below the highway. Mitigation was undertaken by DPWH to protect the highway.

Saltwater flooding occurs in some portions of SitioUsok due to storm tide wherein only agricultural lands are affected.

Within the barangay proper, the creek has become shallow due to scouring. Several houses in the area were being flooded whenever the creek overflowed.

The mangrove forest serves as a natural protection from strong currents and waves. The barangay captain mentioned that he is seeking the assistance of the Department of Environment and Natural Resources (DENR) to prevent residents from cutting the mangroves for domestic use.

To mitigate flooding, manual dredging of the shallow streambed was recommended. No recommendation was made to mitigate the coastal erosion in SitioUsok since the beach recovers during fair weather and the advance of sea is not considered a threat to anybody or anything important.

CAGDIANAO

Barangay Cagdianao is the last barangay of Claver going to Tandag. Houses are made of mixed-used materials and mining employment and fishing are the main source of income. This Barangay is one (1) of the mining barangays of Claver. Some houses are located in coastline and national highway which could eventually create problems in terms of zoning. However, a relocation area of about two (2) hectares has been given to the households residing at coastline.

Landslides and coastal degradation are the geo-hazards identified by the MGB. A massive landslide occurred in January 19, 2011 along the highway, another large landslide occurred earlier near it. The area is highly susceptible to soil mass movement mainly due to the highly jointed nature of the rocks.

The major concern is the swallowing of the Cagdianao River and the accumulation of lateritic soil in the coastal areas which could spread seaward and threaten the marine ecosystem. The mining company affirmed

their commitment to dredge the Cagdianao River which they propose to accomplish in 3 phases. Phase 1 involved dredging of the siltation pond Phase 2 would consist of manual dredging of the shallow portion of the river adjacent to the mine site. The last phase will employ suction – type dredger mounted on a barge on the lower reaches of the river.

2.2.2 Commercial Land Use

PANATAO, WANGKE, CABUGO, URBIZTONDO AND CAGDIANAO

These barangays have common situational analysis in terms of commercial land use, they are all along coastal road or national highway. The location of commercial establishment are scattered which meansthat there is no common location or area. Most type of business in these barangays are sari- sari stores that serve as retailer because the whole sellers were located at the Poblacion. Barangay officials should make necessary effort to construct terminals for four (4) wheel vehicle to reduce or prevent accident. Like residential, commercial establishments have also experienced flooding within the premises.

The material underlying the top soil in these areas is impermeable and floodwaters could not seep down to the ground so an effective drainage is vital in solving the problem. What they have are ineffectual waterways. There is a natural drainage in the form of a stream that is very shallow due to siltation and scouring. There is also artificial drainage composed of round concrete culverts which should allow water to pass underneath the road but debris have accumulated along the entrance and obstructed the passage.

To mitigate flooding, manual de-silting of the streambed and to remove the debris obstructing water flow at the culvert entrance and passageways.

SAPA, MAGALLANES AND LAPINIGAN

These Barangays are located away from the national highway. The only available commercial establishments in the area are Sari- sari stores. In Brgy. Magallanes, being situated in a flat land is prone to flooding. Heavy rain can easily trigger water level to rise that could compromise health and safety of the residents. Embankment of one (1) meter from the natural grade line or construction of structures in stilt form with specified floor elevations could be a practical solution to mitigate flooding in the area.

Brgy. Sapa on the other hand, located in the highlands is prone to rain induced landslides. Poor road network primarily hinders the transportation of goods for commercial purposes. Provincial road should be rehabilitated and maintain for easy access in going in and out of the area either by motorcycle or by four wheel vehicle. Brgy. Lapinigan, the only island barangay is blessed with diverse marine life and a potential in tourist destination of the municipality. Satellite public market should be constructed to attract consumers and traders from different barangays. Port should be developed and mode of transportation will be upgraded (like ro-ro and fast craft). Cottages should be constructed in designated tourist attraction for additional local revenue.

2.2.3 Industrial Land Use

URBIZTONDO, TAGANITO, HAYANGGABON and CAGDIANAO

Operations of large-scale industrial establishments present in the locality are dominated by mining in barangays Urbiztondo, Taganito, Hayanggabon and Cagdianao located at the southern part of the municipality.

A total of 11,540 hectares are identified as mining area with large deposits of metallic minerals. To date, an expansion by around 6,000 hectares is targeted to be utilized as mining area.

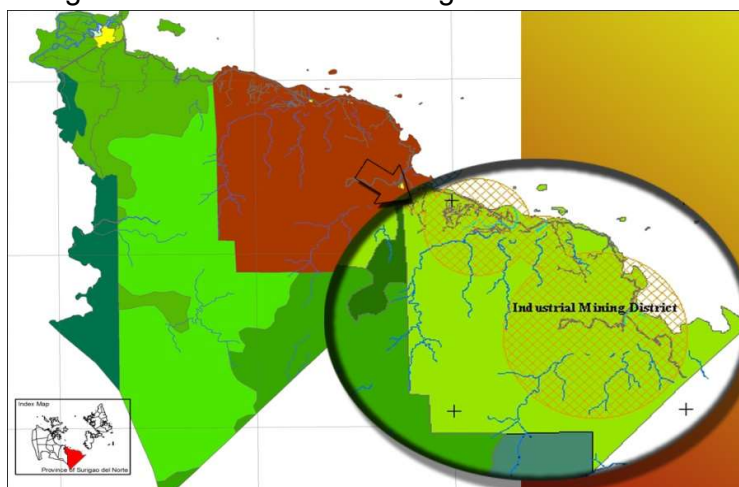


Figure 4: Mining areas occupying four mining barangays namely: Taganito, Urbiztondo, Cagdianao, and Hayanggabon

The largest mining operations in the province are being undertaken in Brgy. Taganito producing nickel ores exported to Japan, Australia and other countries.



Figure 5:THPAL plant site at night



Figure 6:Aerial view of the THPAL processing plant



Figure 7: Birds eye view of the THPAL tailings dam

Industrial establishments are situated within the mined out areas. Increased landslides are observed in Taganito, Hayanggabon, Cagdianao, and Urbiztondodue to soil disturbance from on-going construction of road networks within the proximity of the refinery plant.

2.2.4 Institutional Land Use

Claver has two (2) educational levels available. Taganito National High School (formerly CNHS Annex) caters the 4 mining communities of Brgy. Urbiztondo, Brgy. Taganito, Brgy. Hayanggabon and Brgy. Cagdianao. There are 5 elementary schools which are vulnerable to flooding particularly during the wet seasons from November to February. Worse scenarios which flooded the school site during monsoon season is being aggravated by the climate change and typhoons which mostly hit the area.

There are 11 elementary and 2 primary schools wherein 10 schools are integrating pre-schools as part of their multi-grade system.

All elementary schools do not have laboratories and shops, while Daywan Elementary School has library, clinic and toilets which are in good condition. Sabang, Wangke, Sapa, Panatao and Cagdianao Elementary Schools have spacious school sites while the rest are very limited to

accommodate increasing school population. All Secondary Schools have limited school sites and mostly do not have school facilities except a library and a toilet for Taganito National High School.

There are 99 school teachers and 95 classrooms in the elementary level, while there are 47 teachers and 28 classrooms in the secondary level. The average teacher to pupil ratio is 1:36 for elementary level while 1:37 for the secondary level. The teacher-student ratios 1:60 (elementary) and 1:50 (secondary) are being implemented due to lack of teaching personnel and budgetary assistance. The present quantity and quality of school facilities and classrooms have also led to the adaption of this scheme declining significantly the conduciveness for learning among students. The average classroom for the elementary level accommodated 37 pupils level while each classroom in the secondary accommodated 60 students.

- Based on the present data of the DepEd the current need for additional classroom totaled to 159 for elementary and 81 for high school. Urbiztondo Elementary School needs relocation due to its vulnerability to mudflow from the upper portion (siltation pond of Taganito Mining Corporation)



Figure 8: Aerial view showing the location of *Urbiztondo Elementary School*

- Also, Cagdianao Elementary School is advised for transfer due to its low level location which is a flood prone area.
- Poor condition of classrooms, and school facilities such as library, comfort rooms
- Improvement of school facilities in low level elevations

2.3 Physical Development

2.3.1 Infrastructure Development

Claver has several concrete bridges - Silopan and Daywan bridges in Brgy. Daywan, Pangí and Ladgaron bridges in Brgy. Ladgaron, Clarín wooden bridge in Brgy. Tayaga, Maibay bridge in Brgy. Sapa, Magallanes bridge in Brgy. Magallanes, Wangke bridge in Brgy. Wangke, Cabugo bridge in Brgy. Cabugo, Capandan bridge in Sitio Capandan, Urbiztondo, Taganitobridge in Brgy. Taganito, Hayanggabon bridges I and II in Brgy. Hayanggabon and Kinalablaban bridge in Brgy. Cagdianao. Daywan, Clarín and Maibay bridges are on critical conditions that need major repair. Pangí, Ladgaron and Magallanes bridges are still good while Taganitobridge is in poor condition that needs monitoring and maintenance.

Due to lack of evacuation centers, the municipality has ongoing construction of disaster operation and evacuation center and is expected to operate and function very soon.

Construction of flood control and slope protection phase I is an ongoing project of the present administration that can help protect damage in property and loss of life in Purok 7 Bagakay, one of the poblacion barangay.

Institutional/ government structures such as construction of new Municipal hall phase I and II, construction of Claver PNP station phase I, construction of Women's building, Agriculture building, Legislative building extension are all in construction phase. These structures are designed for flood proofing since the whole area is known to be flood prone.



Figure 9: Institutional structures are grouped together within blocks.



Figure 10: 2-Storey Women's Building



Figure 11: Extension of Legislative Building

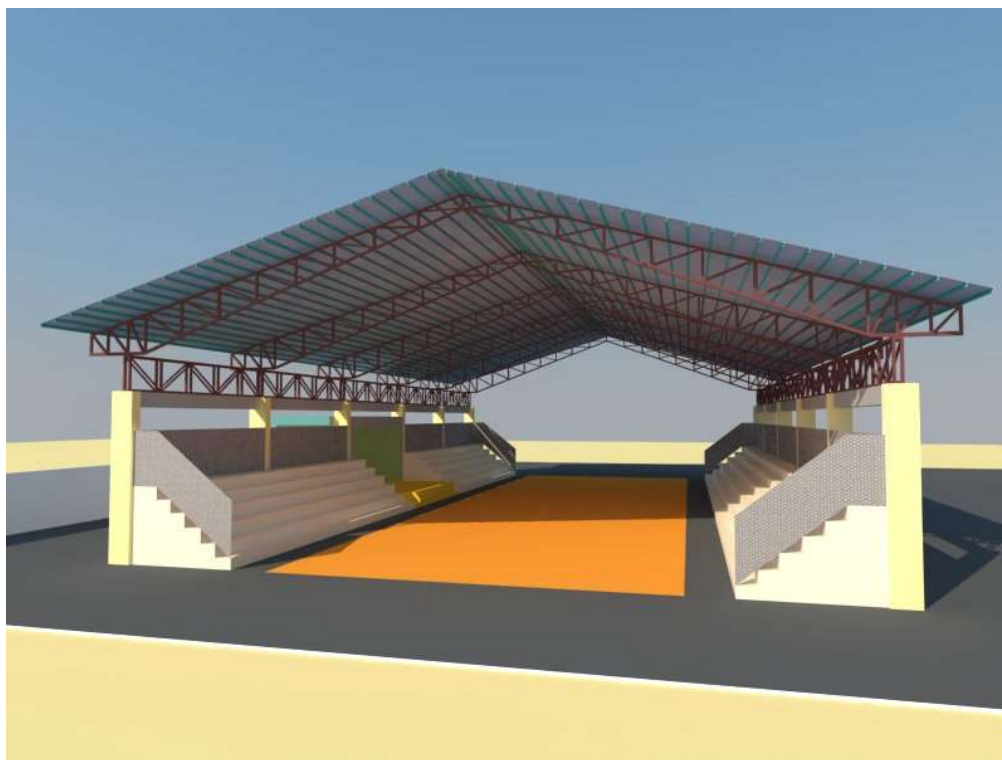


Figure 12: Construction of GK Multi- purpose Building



Figure 13: Construction of covered courts in Sitio Sabang, Brgy's Ladgaron and Daywan



Figure 14: Location of slope protection projects with photos showing actual construction

2.3.2 Road, Transport Facilities

Information differentiating flood characteristics (i.e. flood depths) in different places and above road portions are not available. Use of general flood prone maps assumes that those road portions nearer river and creeks, and especially in tide affected areas are likely submerged during heavy rains. National, provincial and municipal roads submerged by river overflow

need to be delineated so that accessibility concerns, timing of flooding and effect to road, vehicular and pedestrian traffic could be understood. The said delineation can be used in mitigation planning and zoning.

People of Claver is served by number of Public Utility Vehicles (PUV); 10 units bus, 10 units jeepney, 100 units van, 25 units tricycle, 3 units of multi-cab and 20 units habal-habal. The municipality has an Integrated Terminal that serves all types of PUV's which is located near public market and commercial center.

It is found that the national road is in good condition. Municipal and barangay roads are poor. The provincial roads are critical and need immediate rehabilitation.

Poor drainage may result to localized flood along road sections of Honrado, Clarin, Samontina, Garcia and Revelo streets in Brgy. Tayaga and along Magsaysay, Honrado, Rizal, Marcos streets in Brgy. Bagakay, respectively.

Brgy. Ladgaron is traversed by the national highway which has insufficient number of drainage (culverts). This makes it difficult for floodwater to drain easily. Farm-to-market roads (FMR) are similarly affected by floods in Ladgaron.

In Brgy. Magallanes, the road is flood prone and makes access difficult in and out of the area during simultaneous heavy rains and high tide. The barangay is one of the low-lying areas in the municipality which is highly vulnerable to flooding. Rivers surrounding the area is also a main contributory factor of flooding.

In Brgy. Cabugo, barangay road 2 adjacent to a nearby Cabugo River is easily flooded because of its low elevation and lack of drainage system. Siltation and scouring is also a problem in the area.

Debris accumulation potential from landslides and rock falls may be seen in the RIL and EIL maps. Structural assessments against ground shaking and its secondary hazards are still lacking.

Barangays Wangke, Urbiztondo and Cagdianao are traversed by the national highway. The hill slopes adjacent to this road are unstable with risk of falling rocks and landslides.

Heavy scouring is observed around piers of Magallanes Bridge. About ten (10) houses near the riverbanks in Brgy. Bagakay are threatened to be affected of scouring.

Scouring around piers of Daywan Bridge had already resulted to weakening of the bridge. Allowed live load limit to pass the bridge is reduced from 20 tons to 10 tons. Excessive gravel and sand quarrying less than 1-km downstream from the bridge had resulted to the scouring.

In water transportation, There are six (6) fish ports/fish landing located in Tayaga, Urbiztondo, Panatao, Bagakay, Lapinigan and Hayanggabon. Two (4) causeways are owned by PGMC, one (1) in Shenzhou Mining, two (2) in Adnama Mining while Taganito Mining Corporation (TMC) has its own wharf. Fish ports needs rehabilitation.

2.3.3 Power

All barangays of the municipality are energized and the residents enjoy the 24-hour power service of SURNECO. Power interruptions however occurs due to maintenance works done regularly especially during calamities and bad weather conditions. About 3,150 households were being served by the local power franchise.

As projected by SURNECO average power consumption of Claver is 2.0 Megawatts (MW) for industrial, 1.0 MW for commercial, 1.25 MW for public buildings and 0.42 MW for street lights, respectively.

A proposed sub-station will be established at Brgy. Ladgaron in order to meet the increasing power demands brought by establishment of multinational refinery and the presence of mining companies operating in the locality. An increase of power supplementation for the next 3 to 5 years is projected to be at high as 3.66 MW.

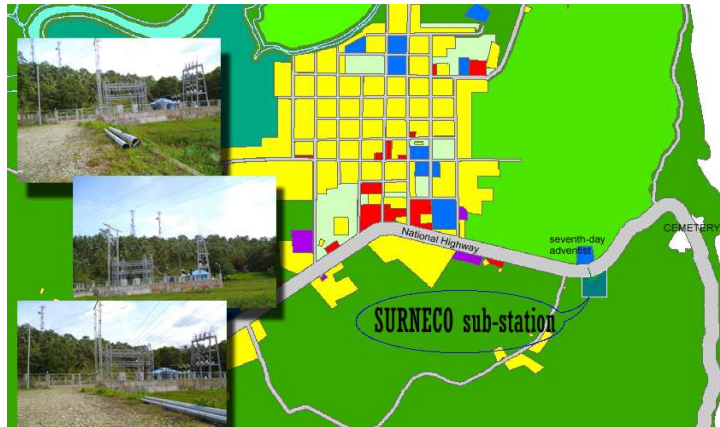


Figure 15: SURNECO sub-station in Brgy. Ladgaron

Existing and Development Needs

- Upgrade local power substation to accommodate demand of mining industries
- Propose for a local power generator utilizing the existing surface waters
- Power supplementation to reduce power interruption

2.3.4 Water

Most of the water systems of 14 barangays are still on Levels I and II. The barangays served by Level 1 water system are Brgys. Wangke, Cabugo and Hayanggabon; Level II are Panatao, Urbiztondo, Taganito and Cagdianao. There are 225 households served in Panatao by the said water system, 85 households in Wangke, 365 households in Cabugo, 430 households in Urbiztondo, 550 households in Taganito, 354 households in Hayanggabon and 348 households in Cagdianao, respectively.

In 2011, a level III water system was constructed in Poblacion barangays. The water source is located in Brgy. Daywan approximately 4 kms. from the town proper with a storage tank that has a capacity of 150 cubic meters. Immediate budgetary allocation is still necessary to further expand its water distribution facilities that can serve residents not only in the poblacion but also on nearby barangays in the municipality.

The total number of households covered by potable water supply in the municipality is around 98% with a remaining 2% of the household utilizing doubtful source for drinking. On another note, there is no local waterworks system in the municipality at this point in time. However, there is one commercial water refilling/ (deep well facility) in the locality situated in

Purok 5, Barangay Bagakay which has passed the bacteriological laboratory standards of the Department of Health.

The existing water supply in the municipality is insufficient for domestic and commercial use when influx of population is taken into consideration. Hence, there is a pressing need to install the waterworks system in the locality to manage the water services.

Table 1. Percentage of Household with Access to Drinking Water Facilities

Type of Water Sources	Number of Households	Percentage
Level I	2,101	39 %
Level II	2,601	49 %
Level III	569	10 %
Doubtful Source	15	2%
TOTAL	5,317	100%

Source: MHO (2010)

Existing and Development Needs

- Operationalize local water system
- Improvement of barangay water system; revitalize BAWASAs
- Utilization of surface water for domestic use and industrial use
- Conduct local water testing regularly
- Protection of the area of local water supply source

2.3.5 Communications

There are no telephone company operating for individual subscribing but telephone booths for international and local connections are available. Most of the households owned cell phone units as main communication facility used because of its affordability. Existing cell sites powered by Smart, Globe and Sun Telecommunications are all operational located in Brgys. Taganito Ladgaron and Bagakay.

With the increasing number of residents using cell phone units, there is a need to establish additional units of communication towers in order to provide better transmission signal especially in rural barangays which hardly reached by the existing facilities.

On the other hand, accessibility and coverage of internet services is very limited even the offices of local government are not yet connected. With the present situation, inter-agency wireless transactions and communications are at low very low pace. Only few establishments have access to internet services through PhilCom, Smart and Globe broad bands.

Postal services in the municipality need additional manpower for the prompt delivery of correspondence and other important communications considering the present coverage and population. There are private couriers available in the area or under the service area which are mostly based in SurigaoCity as their main office.

Existing and Development Needs

- Establishment of barangay-based letter couriers
- Establishment of new cell sites
- Establish barangay based communication center
- Local Geographic Information System Center
- Municipal Library and Reading Center
- Internet service for Municipal Offices
- Establish community eCenter

Proposed Globe modernization project is still on the process of permitting, if this will be realized it can cater internet, cable and telephone connection.

2.3.6 Drainage Analysis

- Earth ditch drainage: 60%; and concrete drainage:40%
- About 16 % of the total households (4717) still do not have sanitary toilet. (MHO,2010).The liquid waste disposal practice in the municipality is 69% blind drainage and 31 % open drainage. This appears to be an acceptable mode of disposing wastewater to municipal drainage canals without the benefit of on-site treatment.
- The situation could be attributable to the absence of drainage master plan of the municipality.

Table 2.*Surface Drainage (Bodies of water within municipality)*

Type of Liquid Waste Disposal Facilities	Number of Households	Percentage
With Blind Drainage	3, 254	69 %
With Open Drainage	1,463	31 %
TOTAL	4, 717	100%

The municipality of Claver has numerous rivers, creeks and springs which drain to the sea. One of the major rivers is the Baoy River located on the eastern part and considered a natural boundary of Claver and Gigaquit. It is a potential source for hydropower power considering its average annual volume of discharge. While it serves as navigation water for farmers and residents living in the upper stream carrying agricultural and forest products it is also deemed a largest source of irrigation serving and supplying volume of waters to hundreds of hectares of agricultural lands (e.g. rice lands) of the three (3) adjacent municipalities of Gigaquit, Bacuag and including Claver. Its tributaries drain into the sea through interconnecting river systems of Kambarus River, Magallanes River and Claver River. The Sapa River in the upper stream as derived from its name itself which translates vernacularly as “plenty of creeks” – drains to the Baoy River. The main contributory source of these rivers is the Malinawa Spring located in the high lands of Brgy. Sapa. Results from the survey conducted regarded this spring as highly potential source of potable water – the water is always clear despite heavy downpour in the vicinity. The present source of potable water for the Poblacion is located in Silopan Spring in SitioTayawod in Brgy. Daywan.

Other important rivers include Kinalablaban River, Hayanggabon River, Taganito River, Cabugo River and Capangdan River. Creeks abound which navigate along and within most of the barangays. The Poblacion, once a swampy area is part of natural drainage system of Brgy. Ladgaron.

In a 2-year span, two major floods are recorded in the municipality in 2009 and 2011 temporarily displacing hundreds of residents. The floods brought by high tides and month-long continuous heavy rains ranged from knee-high to chest level deep. The affected barangays are Brgys. Magallanes, Ladgaron and portion of Poblacion barangays.

2.3.7 Other Uses

Cemetery/Burial Grounds

The Municipality of Claver has a total of seven (7) accessible burial grounds available for public use. There are five (5) cemeteries located in the rural barangays namely Panatao, Wangke, Cabugo, Urbiztondo, Ladgaron and Taganito. An additional area of 0.95 hectares is being allotted to anticipate the future requirement for these uses. In Barangay Tayaga, two burial grounds are owned by the local Catholic parish while one ground is held under the local government unit. In four (4) other barangays, the burial grounds are solely owned by the local government unit for public use. Hence, there is adequacy of existing burial grounds in the municipality.

2.4 Production Land Use

2.4.1 Agriculture

Livestock and Poultry

The municipality does not have animal farms (livestock and poultry), but have many dispersed, small scale piggeries and poultries in backyard scale. With the increasing demand for livestock and poultry meat, egg and by-products; the current production is insufficient. Proliferation in terms of the number of animals should be encouraged to raisers and so with the area for range and pasture. Provision for strategic forage and pasture areas should be available especially for Brgys. Cabugo, Daywan, Ladgaron and Sapa. These barangays have large unutilized areas which are suitable for the production of goats, chicken, hogs and cattle. However, this production program must be supported by the local government through regular provision of veterinary and technical assistance especially those recipients from dispersal program.

Backyard raisers should also be warned that establishment of pigpens near coastal areas or riversides are prohibited. Likewise, swine raising in the residential areas is not allowed. Poultry houses shall be located far from the residential areas so that unwanted smell cannot reach them in anyways. Wind orientation shall also be considered in selecting sites not only for poultry houses but also with pigpens or piggery. Such measures are for health and sanitary purposes.

To ensure clean and safe carcass and other by-products for consumption, a licensed veterinarian before slaughter shall check and inspect the animals' physical and health status and background. With this development, slaughterhouses shall be constructed to support this purpose.

The said facilities will be built in SitioTayawod in Brgy. Daywanwith auxiliary structures conforming to the agricultural engineering standards.

Fishery

Eleven (11) of fourteen (14) barangays are considered coastal communities and fishing is one of the major sources of living of the residents. Aside from open sea fishing, fish culture in cages and pens is a promising venture especially in Brgys. Lapinigan, Panatao, Wangke and in SitioDinangdangan in Cabugo. Production of milkfish and other high valued marine fishes is very potential. Fishermen's organizations should handle this endeavor supported by the LGU and mining companies.

In addition, aside from the existing KaraangBanwa and Malingin marine sanctuaries, establishment of new ones should also be undertaken. Deployment of buoys and floaters shall mark their specific boundaries so that fishermen and intruders will be pre-empted of the existence of sanctuaries. Deployment and enforcement of fish wardens should be materialized equipped with sophisticated paraphernalia such as speed boat for seaborne patrolling. Guard houses at strategic islets should be established to discourage the entry of transient and illegal fishermen in the municipal waters. Fishery codes and ordinances should be strictly implemented.



Figure 16:Identified marine sanctuaries

Establishment of centralized fish landings and cold storage facilities is also needed in the locality. A wet market shall be constructed separate from the customary mixed markets – possibly far from the residential areas but really within the proximity of the fish landing area.

With the volume of fish catch from marine waters is significantly diminishing especially within the nearby reefs. However, more fish catch are observed in the high and open seas. Prevalent reasons for this include illegal fishing activities such as commercial fishing (liba-liba), cyanide poisoning and use of compressed air (boso) and dynamite fishing. Water pollution brought by siltation generated by mining operations is perceived to have reached approximately a kilometer from the seashore which damages the breeding grounds of marine organisms.

Periodic turbidity and pH tests shall be conducted not only on the river systems which water from mining areas flows but also along coastal areas and open seas at least two (2) kilometers offshore. When siltation in the sea is severe, construction of multi-storey silting ponds is highly recommended to ensure that the water flowing downstream are cleared from unwanted sediments which carry minerals harmful to marine organisms. Suspension of operations or payment for environmental violations should be imposed by the EMB in cooperation by the concerned CSOs and LGU to mining companies who fail to comply environmental practices and standards.

Tourism

Most of the tourist attractions in the municipality are island beaches. With fine sands and cool ambiance, these areas offer visitors places to conduct capability and team building seminars.

There are six identified natural tourist attractions in the locality, namely: Alingkakajaw Beach, Kabujuan Beach, Sampaguita Beach, Malinawa cold Spring, Lambason and Itlogan Islets.

A proposed Mines View Deck and park in Brgy. Hayanggabon which will be funded by the Province could be a potential future destination for tourists and travelers alike. The park overlooks the Hinatuan Passage, islands and islets, and glimpse of the Pacific Ocean.

However, recreational amenities are still lacking such as cottages, pools and clean comfort rooms among others. With this, the local government itself shall establish its own facilities to support the increasing demands for leisure. It should also encourage private individuals and

developers to invest on this type of business so that local and foreign tourists will come and visit these primary spots in the municipality.

Support infrastructures such as access roads and clinics including communication facilities such as high-speed internet should be established within the proximity.

More importantly, all facilities fronting the beaches should be constructed with at least 10-meter easement from shore.

2.4.2 Production Forest

Forest production with an area of over 4,000 hectares is located in Brgys. Sapa, Ladgaron, Daywan, Panatao, Wangke, Cabugo and Urbiztondo. With the timber production now getting popularity, unproductive areas especially on the hillsides are now utilized and planted with falcatta. A number of residents have ventured for years this type of livelihood requiring meager start-up capital and maintenance mechanisms yet earning them thousand of pesos during harvests.

Lack of updated data on the actual area and inventory of forest resources could directly or indirectly mean possible encroachment on other land use zones particularly mining.

Proper management of the forest resources in the municipality by implementing appropriate programs and projects for sustainable development. A Forest Land Use Plan (FLUP) shall be jointly undertaken by the LGU and DENR for the protection, proper use, and allocation of forest and forestland in the Municipality's territorial jurisdiction.

2.5 Protection Land Use

2.5.1 NIPAS/NPAAD

There are still nine (9) agricultural barangays. Most of them have areas planted with rice, corn, coconut and other important crops. The major rice producers are Brgys. Daywan, Ladgaron and Sapa. The rice lands of these barangays are supported with irrigation facilities either Communal Irrigation Systems (CIS) or small water impounding structures (SWIS) hence cropping is done twice a year. Other barangays are rainfed hence cropping is done only once a year during rainy season which commence on December until January.

Issues on land conversions should be taken seriously by DA and DAR. Zoning ordinance or other local ordinances should be imposed so that sectoral development will be focused.

As mandated by the national government, maintaining the agricultural lands and its production shall be given importance to meet, if not to exceed the increasing demands of the consuming populace. Support sustainable mechanisms from the LGU and partner agencies shall be made available such as the provision of multi-purpose drying pavements (MPDPs), open storage (OS) facilities, improved irrigation facilities, network of farm-to-market roads, warehouses and organic fertilizer production facilities. Trading posts or bagsakan centers operated either by the LGU or designated farmers' cooperative or association should be established to ensure the monetary return of cooperating farmer-members. These programs maximize the utilization of idle yet arable lands hence increasing the agricultural production areas so with the cropping intensity and production yields.

In protecting the protection forests, enforcement of environmental protection laws shall be enforced and necessary sanctions shall be imposed to illegal timber collectors. Reforestation is still one of the mitigating measures to be undertaken by the local government in coordination with the programs and thrusts of the national government.

Wetlands (lakes, coral reefs, mangroves)

Claver is one of the coastal municipalities in the province of Surigao del Norte. With this, the location normally suggests the presence of wetlands which may comprise of areas for mangroves and coral reefs. The mangrove areas are located along the coastal barangays with an estimate of 20 hectares. At present, the mangrove forests in the mining communities reduce due to reclamation and presence of washed minerals resulted from large scale mining operations. However, reforestation efforts are conducted by the mining companies in most coastal barangays.

Productive coral reefs are generally found more than 100 meters from shores and variety of fishes and shells can be caught and collected here. However, rampant dynamite fishing is observable on these areas hence, frequent visibility of fish wardens should be undertaken.

Watershed Reserve Areas

Baoy watershed is being shared with the mother municipality of Gigaquit. With total area of 16,498.740 hectares, only 4,124.685 hectares are owned by Claver. Considering the contiguous area of this watershed, co-management for the protection of this watershed is one option to be pursued by the respective LGUs. The proposed new watershed area covers 630.53 hectares and immediate delineation is the next action to be undertaken. These areas include the Silopan and Malinawa. The former is the present source of potable water of the poblacion while the latter is eyed to be tapped for future use serving the majority of the municipality. Declaring these areas as protected areas through an SB resolution is highly recommended so that transient timber collectors shall be sanctioned accordingly. Planting more trees endemic to these places can also be done by the local government.



Figure 17:Proposed delineation of these two (2) identified watershed sites

2.5.2 Mining & Quarry Areas

Erosion and siltation following mining and quarrying activities had brought other hazards (e.g. flooding) and environmental problems (e.g. shifting of rivers, scouring).which needs to be addressed by the local government.

Mining

In Barangay Daywan, scouring at the posts of Daywanbridge resulted to reduction of load limit of the bridge from 20 to 10 tons due to structural weakening of the bridge base. Baoy River have altered it course since the construction of an irrigation dam.

Siltation along Baoy River was very evident. The intense siltation could be attributed to two (2) major projects implemented based on necessity and intentions.

The first was the construction of an irrigation dam to assist the farmers of the municipalities of Gigagit, Claver and Bacuag and the second was the construction of the national highway to provide more efficient access for people and products.

The irrigation Baoy Dam was out of commission. The irrigation water has not been reaching the field for quite some time as the water passage to the irrigation network has clogged up from trapped sediments coming from the upstream areas. Of course, the dam does not only control the flow of water but also impound the sediment that it carries.

Controlled water flow also initiated siltation downstream of the dam as the sediment carrying capacity of the river is reduced most of the time. Siltation promotes scouring and scouring result to further siltation. That is the reason siltation is progressive unless dredging or de-siltation of the river bed is done.

Sand and Gravel Extraction

Quarrying along river banks or excessive extraction of sand and gravel had already resulted to stream bed erosion (see Appendix 2). It seems that the excessive extraction resulted in a reaction to replenish the lost sediment in the form of scouring along the nearby banks which in turn, further results to chain reaction of siltation and further scouring.

This process started with the DPWH highway project wherein Baoy River was utilized to supply the construction requirement. The project has long been completed but the excessive extraction continued. The present purpose for extraction is commercial and has nothing to do with government project so it would be hard to justify continuing operation.

To restore the capability of the irrigation dam, the sediment that accumulated in the intake should be dredged. To aid in mitigating flooding, riverbank erosion (scouring) and from siltation should be arrested. A moratorium to excessive sand and gravel extraction along Baoy River should be passed by the local government. Quarrying should be limited to manual methods and any form of mechanized extraction should be banned. Stiff penalties and punishment should be meted out to violators

Ancestral Domain Areas

The National Commission for Indigenous Peoples (NCIP) data revealed that the ancestral domain in the municipality covers approximately 22,069.06 hectares. They are located in the highlands up north including the mining areas in the northwest. These areas are very rich with essential minerals that many multinational and local mining investors are contending for exploration.

The ancestral domain which are claimed by the original inhabitants, the Mamanwas, include complex river systems which are good sources of sand and gravel; thick forests with various thriving various flora and fauna. The said forests are sources of class “A” timber for high-end use in the lowland.

Hazard Impacted Areas

Since these areas are prominently mountainous, they are considered vulnerable to landslide which is either induced by rain or earthquakes and especially when forest covers are disturbed by human activities.

When timber cutting and collection purposely for commercial and industrial uses or for road network construction are not controlled, forest fires may occur during extreme dry seasons when no precautionary measures are undertaken especially by the mining companies heavy equipment operators who traverse and travel upland for mining explorations, expansion and related operations.

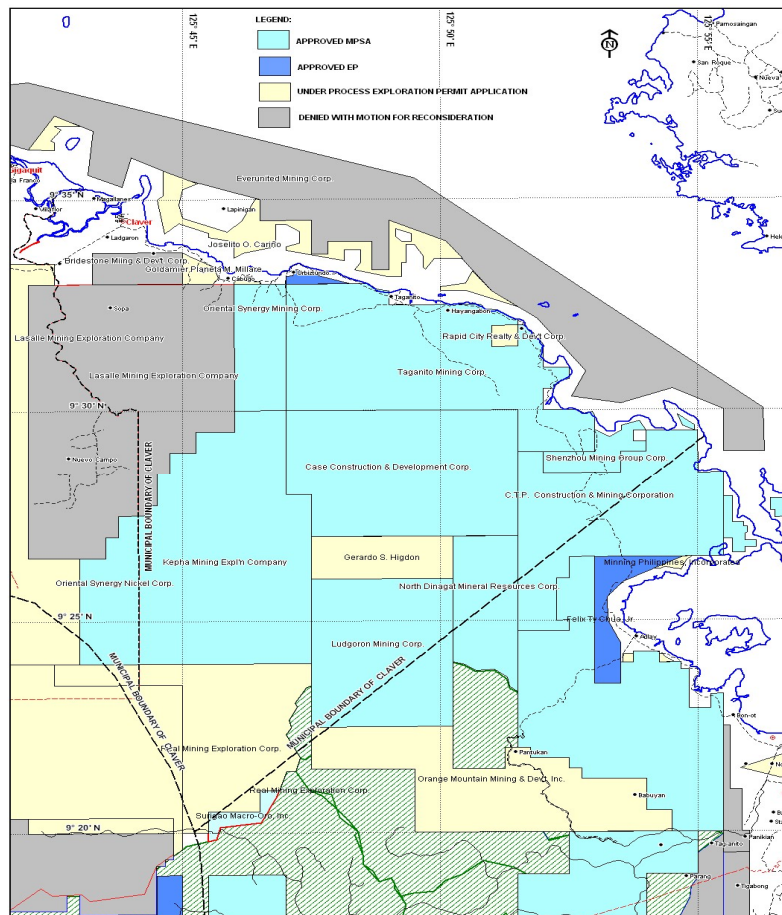
Mining Permissions

The ancestral domain areas in the municipality are covered by the Surigao Mineral Reserve.

Mining companies upon commencing their operations on these domains will secure documents from the host LGU and concerned national agencies such as the DENR-EMB and NCIP among others. These documents include certificate of free-prior informed and consent (FPIC) and environmental clearance certificate (ECC). Upon compliance, the interested investors can apply for business permits, zoning and locational clearances.

On the other hand, information, education and campaign (IEC) via public consultation and hearing on environmental impact assessment are conducted in the affected barangay/s. Such undertaking gave proper insights whether or not majority of the affected population allow the entry of mining operations in the area.

Other mining firms which express their interests in putting their investments on mining operations (excavate-and-haul system) shall only be allowed one at a time in the next twenty (20) years so that unearthed, yet important minerals will not be depleted easily and that the next generation can continue to enjoy the benefits of employment this industry offers. This move requires strong support from the local leaders both from the executive and legislative wing, including the community and sectoral organizations.



Source: MGB

Figure 18: Mining tenement map

Summary of Observed Land Use Change

There is a dramatic change in terms of land use in the municipality in most sectors involved. As it envisions a developed community in the coming decades, a remarkable increase in intensity of land uses is being foreseen. For the increased demands of spaces for various purposes – be it on residential, commercial and institutional, among others, immediate strategic zoning and urban planning must be undertaken before the municipality take its full bloom.

Gradual expansion of growth areas is highly observable especially in Brgys. Tayaga, Taganito, Ladgaron and Bagakay. With the boom of the mining industry; especially, the completion and operations of multi-billion mineral processing plant in Brgy. Taganito, an influx of population is expected to increase. The utilization of idle and unproductive lands and conversion of some nipa areas to residential purposes are likely to take place.

The more people, the more basic needs are required; hence, agricultural production must not always mean an increase on its area but also its intensity and production. At least five (5) hectares of rice area are not planted with for more than a year because they are waterlogged perennially by flood; part of them is already grown with cogon grasses. Land conversion from agricultural to residential is observable. New houses are built within the rice paddies.

Medical facilities and courier services have been accessible to the population. The former have been erected in Brgy. Ladgaron in a two-storey building along the national highway.

Schools' vacant lots including those for agricultural and landscaping purposes have been changed to give way to the construction of additional buildings and classrooms in coordination with private entities in an effort to support the K-12 educational system.

With the perennial flooding, a drainage and sewerage master plan for the municipality needs to be prepared and implemented. Protection and slope dikes for the protection of residential and agricultural areas including Baoy and Magallanes bridge is being undertaken whose present condition is aggravated by Baoy river's voluminous discharge and strong current. In view emergency preparedness for natural and man-made calamities, every barangay should have their own barangay operation centers whose locations are yet to be identified by respective barangay councils. A center for centralized operations and evacuation should be located in Brgy. Tayaga.

Construction of new and extension roads are generally undertaken to service residents and vehicles as well. Construction and rehabilitation of farm-to-market roads are proposed connecting the road networks in the neighboring barangays of Sapa, Panatao, Cabugo, Wangke and Ladgaron. The LGU should prioritize negotiations with lot owners traversed by these FMRs and initiate titling and land banking for the road-right-of-ways (RROWs). ECCs must similarly be secured beforehand. These FMRs hasten the hustle of farmers and residents in transporting agricultural produce to the markets in the lowland.

Areas for a spacious stadium and gymnasium are being considered by the local government, but they have yet to identify the locations for this intention.

The municipal dumpsite is due for relocation but the identified site at Brgy. Panatao is still undeveloped and inaccessible. The present dumpsite in Sitio Pangí, Ladgaron remains unsanitary as it is located along access roads traversing Brgys. Sapa and Daywan. Nearby residents claimed that waste residues had already resulted to waterborne diseases and is a perennial problem.

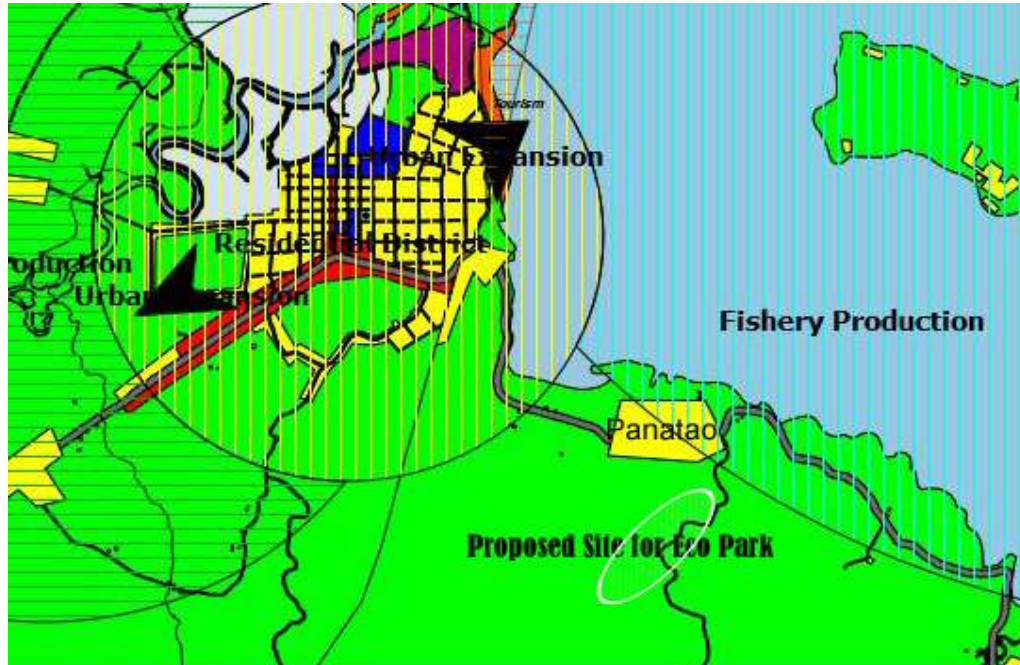


Figure 19: Proposed Eco Park in Brgy. Panatao

As per resolution #26 series of 2009 by the National Solid Waste Management Council (NSWMC) which adopts ECO-park as an option to sanitary landfill.

Mining operations are still concentrated in Brgys. Urbiztondo, Taganito, Hayanggabon and Cagdianao with mine pit areas expanding at the permitted sites. The support facilities such as staff houses and warehouses are built on flat and idle lots. The informal settlers in Brgy. Hayanggabon were relocated to give way to the construction of tailings pond owned by THPAL.

The general land uses; however, remain enforced and are within the prescribe uses. Sanctions were imposed to those who build structures along roads, near rivers and beaches and to those who didn't meet the required easement or allowances from these identified hazard-prone areas. However, urban master planning and environmental management plan are needed and that regular inspection and assessment by local authorities from the building and zoning division needs to be reinforced.

CHAPTER 3

3.0 Vision-Mission Statement

3.1 Vision/Mission

The Vision Statement for the Municipality of Claver serves as the ideal scenario for Clavernons upon which all major plans and programs are anchored.

Vision

A globally competitive economic zone for mining complemented with sustainable agri-fishery industries through dynamic leaders and empowered people.

Mission

To bring the desired progress through strong participation of constituents complemented with coordinated efforts of stakeholders.

3.2 Vision Elements, Descriptors and Success Indicators

The vision statement pictures the desired qualities of the Municipality in terms of the quality of the people as individuals and as society, the nature of the local economy, and the capability of the local leadership.

3.2.1 Qualities of the people as individuals

Clavernons are ***well informed***. This characteristic is described as having high literacy rate, better educational facilities and, safe schools from hazards, improved family income that is above poverty level, and stable employment.

3.2.2 Qualities of the people as society

Clavernons are ***empowered***. This is said to have been achieved when public consultation and participation in the decision-making process and in the planning, implementation, monitoring and evaluation of government programs and projects are regular. In view of risk reduction and climate change adaptation, Clavernons are transformed into a disaster-prepared citizenry where they can be immediately mobilized in times of crisis/emergency. The government, private sector and civil society are involved and pour resources in hazard risk reduction and adaptation actions to make the municipality a safe place and its communities resilient.

Likewise, there is strong advocacy for public interest issues such as social welfare and poverty reduction, social justice, health and sanitation, gender equality, shelter and housing, environmental concerns and the like.

3.2.3 Nature of the local economy

Municipality of Claver's economy is envisioned to be ***globally competitive, for mining and a sustainable agricultural fisheries industry***. This can be attained first of all through a vibrant special economic zone that will encourage inflow of investments from mining activities. The municipal government and its mining investors and developers must establish a competitive and environmentally sustainable mining industry that is also supportive of its agri-fishery economy. Fishery, agriculture and forest activities negatively impacted by mining must be addressed to ensure security in food production and consumption. And lastly, the Municipality of Claver must increase agricultural farm and fishery productivity and help develop a strong market for its products by local farmers and fishermen.

- a. To be ***competitive***, the Municipality of Claver must modernize its agricultural sector through the application of mature and appropriate technologies in the production and post production phases especially for rice and other grain products.

- b. Claver's economy must ***diversify***. The municipality must exploit its strengths and natural advantages such as aquaculture, water-related recreation and eco-tourism. Claver must strive to attain a certain degree of self-sufficiency in other food commodities such as fruits and vegetables and meat products.
- c. Claver must always be ***environment-friendly*** in its economic development programs and projects. The municipality must be able to protect and rationalize its utilization of surface waters for its fish industry. Likewise, future manufacturing industries as well as trade, commercial and service activities should not be allowed to contribute to the degradation of the environment.

3.2.4 State of the natural environment

Clavernons envisioned living in an environment that is clean and safe. A clean environment would translate to a municipality where all types of wastes are properly disposed of, and where air and water quality is way above the standard of acceptability.

Because of this realization, Clavernons envisioned their natural environment to be restored, developing its natural resources in its full potential.

However, environmental and technical issues surrounding this mining barangays such as siltation, water and air pollution, non-payment of taxes, over exploration by entities/companies within the area of jurisdiction of the municipality. This could be a perennial problem that the municipality has to face if not properly addressed.

3.2.5 Condition of the built environment

- a. A ***balanced*** relationship between the built and the un-built environments means that current and future built environment is integrated into the municipality's un-built space consisting of parks and open spaces, rivers, creeks and swamps, fishponds and croplands, beach and coastal areas. Productive sources of food such as fishponds. Croplands and marine sanctuaries are delineated and protected and that standards on open space requirements such as those pertaining to subdivision development, housing, road and river easements, salvage zones, water supply and utility lines/facilities among others are strictly complied with.

- b. Creating a **planned and orderly** community means that Clavernons identify and develop suitable areas for urban expansion in the form of mixed-use growth nodes that are relatively safe from natural hazards. Other success indicators include:
 - 1) Increased efficiency of the circulation network with new roads and bridges constructed, existing ones rehabilitated, the public transport system rationalized, and decentralized multi-modal transport terminals provided such as ports;
 - 2) Improved quality and quantity, and increased affordability of water supply, power supply, telecommunications and internet services; and
 - 3) Adequate and effective drainage, sewerage and flood control systems.
- c. Taking into consideration the natural limits and constraints inherent to the land resource of the municipality, a desired condition of the built environment is the development of **safe forms and settlement patterns** away from identified environmentally critical areas and resource reserves such as wetlands and swamps. As for existing built-up areas, appropriate measures will be adopted to reduce building vulnerability and society risks, disruptions especially from floods, coastal surges and rainfall and earthquake induced landslides and from climate-related risks such as sea level rise, etc.

3.2.6 Capability of the local leadership

Clavernons desire to have **dynamic** local leaders who are persistent and consistent in promoting public interest and welfare above their selfish interests. In concrete terms, the people of Claver would like to experience the following effects of firm, decent and progressive local governance:

- a. Strict enforcement of laws and municipal ordinances

Laws and municipal ordinances are set of rules of conduct established and enforced by authorities for the good of the majority.

- b. Morally upright and competent government officials

The municipal government shall maintain morally upright and competent civil servants who are committed to put public interest at the forefront at all times.

c. Self-reliant LGU, less dependent on IRA

The local government unit is empowered to become self-reliant communities and to act as effective partners in the attainment of national goals. The municipal government has the capacity to maximize its income through progressive means that are practical and equitable and thus reduce the municipality's reliance on the national government.

d. Effective, efficient and responsive municipal government

Clavernons hope to have an effective, efficient and responsive municipal government. An effective municipal government is able to deliver appropriate services if and when needed. Efficiency relates to the economy in fiscal and time management in delivering public services. A government should be responsive and equipped with readiness during emergency situations.

e. Strengthened local government capability

The Municipal Government of Claver is a capable local government institution. However, there are some areas of local governance that need to be strengthened such as the technical capability of its human resources and system capability of its organizational structures.

f. Disaster-resilient LGU and community

Claver is located in an environmentally critical area with occurrence, frequency and magnitude of natural disasters are unpredictable. Therefore, it is imperative for the municipal government and community to be prepared and resilient during and after disasters.

g. Strengthened LGU-NGO/PO linkage

The Non-Governmental Organizations and Peoples' Organizations are recognized as active partners of the municipality in the pursuit of local autonomy and good governance. A strengthened

Regional/Provincial-LGU-NGO/PO linkage would help Claver to effectively and efficiently deliver services, develop programs and projects, improve local productivity and income, spur urban development, promote ecological balance, and enhance the economic and social-well being of the people.

3.3 GOALS

- *Industrialization based on responsive mining activities and responsible mineral resource utilization.*
- *Implementation of land and water zoning responsive to the future utilization of land e.g. mining, commercial, residential and agricultural uses among others.*
- *Multi-partite collaboration with concerned agencies on the implementation of various comprehensive agrarian reform, agri-fishery and environmental development programs.*
- *Promotion of rural housing development via land acquisition for community-based housing and resettlement program especially to families with marginal income.*
- *Optimum utilization and management of property delineated lands for sustainable development.*
- *A self-reliant and resilient community provided with better and equitable access to basic services including equal protection from unexpected natural calamities.*
- *Upgraded environmental quality e.g. air, water and soil via implementation of reforestation, coastal clean-up, environment-friendly industrial and agricultural practices.*

3.4 OBJECTIVES

- *To institute a support system to prepare communities sustain their socio-economic undertakings during pre and post mining*

operations.

- *To maximize land utilization and development according to their suitability and capability delineating mining and agricultural production zones for sustainable development.*
- *To protect the identified special agri-fishery development zones and other important protected areas from land conversion or any other uses.*
- *To improve crop and livestock production via assistance of farm inputs and other support mechanisms.*
- *To implement Solid Waste Management Program: purchase garbage compactor, shredder and construct materials recovery facilities.*
- *To implement Integrated Coastal Management and other related projects*
- *To protect the public from any untoward natural calamities.*
- *To rehabilitate and construct drainage system*
- *To implement Zoning Ordinance and other pertinent laws*
- *To deploy large boulders and construct riprap*
- *To implement dredging activities*
- *To construct dumpsite and MRF facility, Establish eco-park*
- *To rehabilitate existing drainage and construction of new units*
- *To maintain deepness of riverbeds*
- *To maintain sanitation and cleanliness*

CHAPTER 4

4.1 Existing Land Use Strategies

URBAN

Housing

- Encourage non-government organizations and private sector to actively participate in housing development projects
 - *GawadKalinga housing projects at Cagdianao, Taganito, Ladgaron.*
 - *Resettlement sites at Brgy. Hayanggabon and Barangay Cagdianao*
- Pursuance of legislative and executive measures for acquisition and land banking of ideal residential areas for the housing program
 - *Purchased of Pangi GK site at Brgy. Ladgaron*
- Promote the organization of housing cooperatives and neighborhood associations for the landless urban poor.
- Tap housing development agencies for technical assistance in land acquisition, land allocation, building materials and construction technologies
- Intensify advocacy on prohibition of construction of dwellings in danger zones and environmentally critical areas

Commerce and Industry

The strategies to improve business climate in the municipality through the following activities:

- Provide adequate support to local businessmen including improving license procedures
 - *Business Permit and Licensing System (BPLS)*
- Undertake investment efforts to encourage local businesses to expand or establish new commercial ventures
 - *Claver Chamber of Commerce*

- Enactment of business friendly policies such as business incentive ordinances
 - *No incentive Code*
- Close coordination with concerned agencies

Education

The current strategy to make basic education accessible to all rural and urban barangays includes:

- Continue implementing 'PaaralansaBawat Barangay'
 - *Implemented*
 - *Reduced gap between demand and supply of classrooms*

Sports and Recreations

- Development of potential areas for sports and recreation
 - *Brgy. Covered Courts*
- Conservation and preservation of natural recreational resources
- Establishment of sports and recreational center
- Invite private groups and individuals to put up recreational and sports facilities

INFRASTRUCTURE LAND USE

The strategies to improve communication and linkages among different areas to support social and economic activities, better access to services include the following:

Infrastructure and Utilities

- Provision of transport system necessary for the municipality
 - *Claver Integrated Terminal constructed and operational 2010*
- Construction of roads from feeder roads to farm to market roads
 - *Application to Philippine Rural Development Program (PRDP) on-going.*
 - *Ladgaron Brgy. Road upgraded*

- Improvement of provincial and barangay road
 - *Lawihon provincial road*
 - *Purok 7 Ladgaronbrgy. Road*
- Construction of canals and provision of proper drainage, sewerage system and flood control
 - *Ladgaron irrigation canal constructed*
 - *Bagakay flood control and slope protection on-going*
 - *Canal lining in Bagakay and Tayaga portion constructed*
- Periodic road maintenance
 - *Provincial Road: No periodic maintenance, however the Provincial Government source out funds for the purpose*
 - *Municipal Road: no periodic maintenance*
- Implementation of policies on road utilization and maintenance
 - *Only for ARCDP projects –DaywanBrgy. Road and Bridge*

Water supply

- Organization of barangay water supply associations
 - *Most of the water systems are operated by BLGUs which were established after 2006 –successful*
- Provision of potable water in every barangay
 - *Cabugo Level II, Poblacion Barangays Level III*
- Survey of potential water sources for future needs
 - *Malinawa, Silopanwatersheds surveyed and were found potential sources of Level III water supply system. The existing Level III water system of the Poblacion barangays is sourced from Silopan watershed.*

Overall assessment:

- *Pursuance of legislative and executive measures for acquisition and land banking of ideal residential areas for the housing program will be continued.*
- *Continue to develop commercial areas in Poblacion which is considered the Central Business District*
- *Continue to expand and manage schools with consideration of environmental hazards of the place*
- *Pursue the implementation of Recreational and other Sports facilities*

- *Pursue the construction/rehabilitation of Farm to Market Roads and other infrastructure facilities*
- *Pursue the expansion of Level III water supply system in all barangays*

PRODUCTION LAND USE

The strategies to support tourism in the municipality and bring about the needed investments to further develop its natural and built environment. The Municipality will similarly carry forward the following strategies into the next land use plan.

Tourism

- Inventory of existing and potential tourism sites
- Establishment of appropriate tourist arrival
- Institutionalization of tourism advocacy
- Facilitate the establishment of adequate support infrastructure facilities and service to the tourism sector
- Intensify investment in tourism-related enterprises

Eco-tourism

- Promotion and development of potential tourism areas
- Identification sanctuaries as possible tourist spots
- Conservation of tree parks and biotic areas as protected tourist areas

Forestry

- Coordinate with the DENR and other related agencies on the implementation of community-based forestry projects
- Establish tree parks
- Conduct seminars on proper utilization of forestlands
- Enforce ordinance on log ban
- Implement tree planting program
- Impose penalties on kaingin
- Enhance municipal-wide adopt a street program

Agriculture

Many strategies to pursue a sustainable agriculture and industrial based economy and livelihood for Claver were carried out in the past. The municipality hopes to continue carrying out the strategies forwards in the next land use plan.

- While no agricultural plan for the municipality was developed; annual priority projects, programs and activities (PPAs) are always prepared in the annual investment plans. These PPAs are implemented within a year or in the subsequent year.
- Conducted a survey on the status of agriculture and fishery production.
- Conducted Participatory Coastal Resource Assessment to evaluate and assess whether the existing conditions of the pre-determined sites allow the establishment of marine sanctuaries and identify possible interventions en suite with the specific area.
- Conducted municipal-wide inventory of farmers, livestock and poultry.
- Established demo farms on adoptable agricultural practices.
- In coordination with Department of Agriculture-Regional Field Unit and attached agencies, various demo farms were established especially the Hybrid Rice-Duck Farming System which applied organic inputs.
- Initiated lobbying for the development of rural infrastructure.
- Constructed, rehabilitated and upgraded farm-to-market roads e.g. Bayognon FMR in Brgy. Tayaga, Ladgaron FMR in Brgy. Ladgaron; other interventions for the development of rural infrastructures e.g. FMRs, farm bridges are still lobbied for possible financial assistance from local and foreign funding institutions e.g. Mindanao Rural Development Program (MRDP), AusAID, USAID-Growth Equity in Mindanao (GEM), AECID.
- Provision of production support mechanisms
 - *Subsidized palay seeds to farmers in first come, first serve basis*
 - *Conducted technology transfers through season-long Farmer's Field School (FFS) for rice and corn, respectively*

Agri-industrial

- Provide adequate pre and post harvest facilities like farm-to-market roads and other facilities, and establishment of agri-industrial centers
 - *Farmers associations and cooperative were provided with power tillers, mechanical threshers, trailers*
 - *Constructed multi-purpose drying pavements (MPDPs), mechanical flat-bed dryer, concreted irrigation line canals*
 - *Six (6) private individuals owned and maintained the rice milling industry*
- Identification and establishment of production areas for high-value crops, key crops and livelihoods
 - *Identified Brgys. Daywan, Ladgaron, Sapa and Magallanes as major production areas for rice; Brgy. Sapa for peanut; Brgys. Daywan and Magallanes for watermelon; Brgys. Daywan, Magallanes and Sapa for corn;*
 - *Provided power tillers and mechanical threshers to farmers' association servicing their fellow members during land preparation and harvesting season.*

Mining

- Identification of expansion areas for mining
- Strict observance of mining laws

PROTECTION LAND USE

Prime Agricultural Land and Forests

- Issues on land conversions should be taken seriously by DA and DAR.
- Support sustainable mechanisms from the LGU and partner agencies shall be made available such as the provision of multi-purpose drying pavements (MPDPs), open storage (OS) facilities, improved irrigation facilities, network of farm-to-market roads, warehouses and organic fertilizer production facilities. Trading posts or *bagsakan* centers operated either by the LGU or designated farmers' cooperative or

association should be established to ensure the monetary return of cooperating farmer-members.

- Enforcement of environmental protection laws shall be enforced and necessary sanctions shall be imposed to illegal timber collectors.
- Reforestation of upland areas.

Wetlands (lakes, coral reefs, mangroves)

- Reforestation efforts by the mining companies in most coastal barangays.
- Environmental management programs with mining companies
- Frequent visibility of fish wardens should be undertaken.

Watershed

- Immediate delineation of watershed.
- Declaration as protected area through an SB resolution.

4.2 Proposed Land Use Strategies

4.2.1 The Concept/Structure Plan

Recently, part of the established mining sites is declared as **Special Economic Zone for Mining**. With this declaration, the locality is considered a frontline in the regional development as extensive mining industry continues to flourish. Iron ore is the major mineral deposits found in barangays of Taganito, Cagdianao, Hayanggabon and Urbiztondo. As municipality envisions as a mining capital in the region, this industry is expected to draw bigger investments and employment opportunities. The full operation of processing plant in Taganito is also expected to experience influx of population. Consequently, increase of demands for goods and services would result to the provisions of commercial and residential spaces. Currently, settlements in the mining barangays are building-up mostly made of light materials unlike the resettlement of in-house staff and personnel. Residential uses are presently mixing up with commercial use as some residential units are converted for dual purposes.

Urban expansion in the mining communities is only limited in one direction. Built-up areas are concentrated in the growth centers as affected

population seek for convenience and accessibility to work. Aside from the poblacion areas, residential and commercial development will take place on strategic locations with proper interventions and conformity to land use and zoning.

Designing for proper road design for access and circulation remain a challenge to be addressed given the linear or ribbon type development already existing. In the absence of such designs, traffic congestions, landslide hazards, poor drainage, health and safety concerns, and environmental pollution will likely result the deterioration of the place. Establishment of proper commercial zone in a low dense level is proposed so that it may not compete with the existing commercial development in the Poblacion area. Infra-support facilities such as the rehabilitation of port/wharf in Hayanggabon must be a priority in order to improve access to water transport to connect to other key areas in the region. Proper set-backs are required before uncontrolled built-ups would be proliferating for safety and convenience to other road users. The Local Government Unit must establish socialized housing units for the displaced households as well as safe and affordable shelter for workers and visitors. Proper monitoring must be regularly conducted by local authorities to check development in mining sites. Road set-backs, artificial and natural buffers, natural hazard reduction, proper containment and disposal of wastes and other mining effluents, among other negative impacts from mining related activities must be addressed and coordinated with mining companies and the national government.

On another hand, Claver will continue its agri-fishery development at the lower delta area. Clustered agri-fishery barangays will benefit from this development and will cater to the needs of the working populace in the mining industry. Local government will support agricultural intensification and production of the rural farmers and fishermen as it is their major source of livelihood. Expansion of residential and commercial area would be the major changes in the land use plan whereby increasing the density and the required road networks. Interior properties must be provided with road network integrating to the existing road circulation. Slight agri-land will be reclassified for this purpose to accommodate urban expansion on the east and southern part of the old town site. Urban development must move away from the flooded Magallanes area which will be classified as the aqua and marine resource development area. Intensive fishing development must be located in portion of Ladgaron and Magallanes towards the boundary of Gigaquit.

At a glance, Claver will take a dual development which focuses on mining and agri-fishery which will form the radial spatial development combined with linear development. Proper utilization of land must be considered and limit

reclassification of agri-land to urban use. Development must be properly controlled to sustain the land capability and limit the impact of possible hazards such as flooding, erosion, liquefaction, tsunami/storm surge and landslides. Improvement of tenure must be given priority for those areas covered as mining reservations but not covered by mining claims. CADT areas within the municipality is 22,069 situated in barangays of Cagdianao, Hayanggabon, Taganito, Urbiztondo, Cabugo, Sapa, Wangke and Panatao. Responsible utilization of the abundant inherent resources of the municipality must be the fundamental principle for its sustainable development.

4.2.2 Proposed Development Strategies

Urban Development

Development Strategy for Residential Districts

By 2020, Claver has a projected population of 27,100 according to CBMS and 21,939 according to NSO census count.

Development patterns suggest there will be a need for additional housing for the next ten years. Currently, there is a sufficient land area within the Municipality's boundaries to accommodate the land area needed for residential growth.

Land Use Action Steps

- 1.1. *Identification of resettlement site with an approximate area of 20 has. situated in Dojong, Ladgaron.*
- 1.2. *Maintain a Single Family Residential District that reflects traditional development patterns. This district should provide a complete range of dwelling types at lower densities.*
- 1.3 *Single-family residences are permitted uses at a maximum density of forty five (45) dwelling units per hectare. Duplex-family residences are permitted at a maximum density of seventy (70) dwelling units per hectare.*
- 1.4 *Multi-family units are conditional uses at a maximum density of ninety (90) dwelling units per hectare. The multi-family conditional use approval process will ensure compatibility between residential types by relying on varying levels of mitigation requirements given the size of the project.*

1.5 Mitigation requirements will differ for projects within three to four units, five to 14 units, and 15 units more. Mitigation measures will minimally address traffic glare, separation between buildings, open space/landscaping, and buildings heights where view protection is important.

1.6 Residential-commercial occupancy structures that are located along coastal areas, floodways and banks of rivers and creeks identified as highly hazardous from floods, erosion, or from coastal surges shall be removed from said locations. Water Code provisions on salvage zones, should as a minimum, be complied with. When information by geomorphologic approaches, past storm surges, past flood and/or coastal/flood modeling reveal serious threat to human occupation, these zones must be delineated as unsafe for residential use. In the absence of flood studies to establish flood reference lines, barangay's that are known as prone to flooding such as Magallanes, Wangke, Cabugo, and parts of Tayaga should have its first floor lines raised 1.0 meter higher than the highest flood level known in the locality. Flood proofing measures shall be taken and preparedness and response plans must be in place for the barangay.

Open spaces, road right of ways, buffers and easements, proper drainage, evacuation furniture and access to and from main roads from local collector roads must be appropriately integrated in the subdivision layouts and landscape.

1.7 Residential structures that are located in and foot slopes of highly susceptible landslide prone and accumulation areas (earthquake induced and rainfall induced) shall be removed from said locations. Water Code provisions on salvage zones, should as a minimum, must be complied with. Proper protection and stabilization of hill slopes must be followed.

Open spaces, road right of ways, buffers and easements, proper drainage support, evacuation furniture and access to said places must be appropriately integrated in the settlement layouts and landscapes. Evacuation routes shall be identified and delineated.

1.8 New and existing building constructions must comply with the Provisions of the Philippine National Building Code and Structural Code of the Philippines. Buildings and infrastructures identified in highly liquefaction prone areas must be reviewed for structural adequacy. Evacuation routes shall be identified and delineated.

1.9 Eroded riverbanks shall be rehabilitated and scouring of river bed around bridge piers must be addressed.

Development Strategy for Commercial Development

To support the growth of commerce in these areas, the vacant spaces beside the national roads should be designated as General Commercial Zones (GCZ). With low elevations and occurrence of floods, land fill with gravel and other earth materials should be done before putting up the establishments in these area. Finish floor elevations of structures shall be more than or equal to the pavement elevation. A 30 meter road-right-of-way (RROW) should be strictly implemented in National Highways traversing urban barangays.

Landbanking should also be undertaken by the government consequently stalls and arcades should be constructed for lease to interested individuals and organizations at affordable monthly rates. The Municipal Economic Enterprise and Development Office (MEEDO) shall handle and manage this sector

Land Use Action Steps

1.1 Commercial structures that are located along coastal areas, floodways and banks of rivers and creeks identified as highly hazardous from floods, erosion, or from coastal surges shall be removed from said locations. Water Code provisions on salvage zones, should as a minimum, be complied with. When information by geomorphologic approaches, past storm surges, past flood and/or coastal/flood modeling reveal serious threat to human occupation, these zones must be delineated as unsafe for residential use. In the absence of flood studies to establish flood reference lines, barangay's that are known as prone to flooding such as Magallanes, Wangke, Cabugo, and parts of Tayaga should have its first floor lines raised 1.0 meter higher than the highest flood level known in the locality. Flood proofing measures shall be taken and preparedness and response plans must be in place for the barangay.

Open spaces, road right of ways, buffers and easements, proper drainage, evacuation furniture and access to and from main roads from local collector roads must be appropriately integrated in the subdivision layouts and landscape.

1.2 Commercial structures shall not be allowed in or at foot slopes of highly susceptible landslide prone and accumulation areas (earthquake induced and rainfall induced). Existing structures shall be removed from said locations. Water Code provisions on salvage zones, should as a minimum, must be complied with. Proper protection and stabilization of hill slopes must be followed.

Open spaces, road right of ways, buffers and easements, proper drainage support, evacuation furniture and access to said places must be appropriately integrated in the settlement layouts and landscapes. Evacuation routes shall be identified and delineated.

1.3 New and existing building constructions must comply with the Provisions of the Philippine National Building Code and Structural Code of the Philippines. Buildings and infrastructures identified in highly liquefaction prone areas must be reviewed for structural adequacy. Evacuation routes shall be identified and delineated.

1.4 Eroded riverbanks shall be rehabilitated and scouring of river bed around bridge piers must be addressed.

Industrial Development

Development Strategy for Industrial (Mining) District

To ensure a diverse mining and manufacturing-related base for Claver by designating lands appropriate for intensive industrial activities. In fact, almost half of the total land area of Claver is allocated to mining activities. The Municipality has on-going construction of ore refinery and is expected to operate for number of years. It is said to have the biggest iron mineral deposit in the world. There have been recent major strides that the Municipality is facing in terms of pollution control and the probable destruction of mother nature. The challenge lies within the entire community and its leaders, for the mining industry will remain as a major contributor to the local economy.

Land Use Action Steps

- 1.1. Create an Industrial District for land uses associated with extraction, processing, transportation, distribution, and wholesale activities.*
- 1.2. Industrial District lands have access to maritime, rail, aeronautical, and/or truck transportation systems.*
- 1.3. The district allows a mix of support activities as accessory uses in the district, such as offices, trans shipment facilities, warehousing, and uses that benefit employees.*

- 1.4. *Maintain the separation of industrial activities from residential and commercial uses with the use of buffers or transitional uses, such as heavy commercial/light industrial uses, parks preferably linear tree parks along highways that would act as breathing zones, and community facilities.*
- 1.5. *The location of industrial activities serving regional needs and requiring access to road and sea links are most appropriate along Taganito Port up to Hayanggabon shoreline.*
- 1.6. *Conduct an annual review to assess an adequate supply of appropriately zoned land for large- and small-scale mining. Any expansion or retraction of industrial zoning should stress compatibility with adjacent land uses.*
- 1.7. *Small and large scale mining companies should adopt operating performance standards for pollution control and safety measures to ensure a safe and sound environment.*
- 1.8. *Existing properties with mining areas along parts of Taganito, Hayanggabon, Cagdianao and Urbiztondo will maintain their industrial zoning status as long as the use remains active. If the property remains inactive for a period of one year, change in use allowed shall be made consistent with this plan for the municipality with appropriate environmental remediation.*

4.2.3 Land Demand and Supply (Land Accounting)

4.2.3.1 The General Land Uses

Part of the now established mining company site is declared as **Special Economic Zone for Mining**. With this, declaration, the locality is now in the frontline in the regional development as the intensive mining industry development. Iron ore is the major deposits found in Barangays Taganito, Cagdianao and Hayanggabon and is considered to have the biggest deposits in the whole world. Maximum production and utilization should be considered with utmost importance so that these finite resources will not be put into waste.

On another hand, Claver will continue its **agri-fishery development** at the lower delta area particularly the old town site area. Clustered barangays will benefit from this development and will cater to the needs of the mining development cluster area. Local government will

intensify crop productions and services will be the major livelihood for the urban dwellers.

At a glance, Claver will take a dual development which focuses on mining and agri-fishery which will form the radial spatial development combined with linear development. Proper utilization of land must be considered and limit reclassification of agri-land to urban use. Development must be properly controlled to sustain the land capability and limit the impact of possible hazards such as flooding, erosion, liquefaction, tsunami/storm surge and landslides. Improvement of tenure must be given priority for those areas covered as mining reservations but not covered by mining claims. Land resource must be the basic fundamental of Claver's sustainable development.

On the other hand, forest land being classified as protection forest should highly be protected as much as possible. Further mineral exploration and any illegal activities within these identified sites should be strictly prohibited.

The table below provides a breakdown of land uses in the Municipality of Claver.

Tourism

A total of 9.0has. is allocated to tourism industry. Most of the tourist attractions in the municipality are island beaches. This will serve as "breathing zones" for visitors and employees working in mining companies, tourists will come and visit these primary spots in the municipality.

Support infrastructures such as access roads and clinics including communication facilities such as high-speed internet should be established within the proximity.

LAND USE CATEGORIES	EXISTING		PROPOSED		TOTAL	Remarks
	(has.)	Backlog	FUTURE REQUIREMENTS	STRATEGIC DEV'T. REQUIREMEN T		
		/Surplus				
Residential	38.36		81.30		119.66	
industrial zone	26.48		10		26.48	
Commercial	1.85		2.69		4.54	
Infrastructure <i>*Flood control (dikes gabion, flood ways, reservoirs, dams)</i> <i>* Slaughterhouse</i> <i>*trading post/ *bagsakan-center</i> <i>Ports</i> <i>*cold storage</i>	223.50		155.00 0.50 1.00 20.00 1.00			
Institutional	4.11		2.89		7.00	
Open Spaces <i>*Parks/Playground and other Recreational Spaces</i> <i>*Cemeteries</i> Others/Vacant Land	6.85 0.35 5.84		20.00 0.95 3.00		36.99	
Agriculture	2,494.15	(30.31)		126.48	2,590.32	Decrease due to mineral exploration/utilizat ion
Crop Production	3,885.06		443.00		4,328.06	
Livestock Production			99.00		99.00	
Forest and Forest Categories						
Protection Forest	3,071.00				3,071.00	

Production Forest	11,680.00	(7,152.75)			4,527.25	utilized for industrial, idle
Watershed Area			354.00		354.00	
Mining/Quarrying	11,540.00		5,847.52		17,387.52	
Grassland/ Pasture						
Agro-Forestry	566.00		0.73		566.73	
Tourism			9.00		9.00	
Other Uses					-	
Water Uses						
Inland Water	122.60				122.60	
Mangrove Forests	20.14				20.14	
Aquaculture and Mariculture			10.00		10.00	
Others/Vacant Land	5.84		3.00		8.84	
TOTAL	33,692.13				33,692.13	

Source: MCLUP 2014

CHAPTER 5

URBAN GROWTH AREA

The municipality is aiming for cityhood in the next five years. Facts and figures shows that Claver has met initial requirements in order to come into terms with the new status. At any rate, the first decisive steps have already been taken by the municipal government through its embarkation on this planning activity. To be more proactive in defining the direction and shaping the pattern of development in their territorial jurisdiction.

5.1 Urban Development

5.1.1 Poblacion Growth Center

The Poblacion is composed of two (2) barangays namely: Brgys. Tayaga and Bagakay. It is bounded by the national highway to the south, running along the coast along the east stretching up to the coast of Sitio Sabang to the north, and bounded by river tributaries of Brgy. Magallanes to the west. Residential units with high population density settles along arterial streets and extends up to the seawall to the northern portion. Sites for schools and other institutions such as government buildings, rural health unit, having service spheres to the entire community are grouped about a central or common point and combined with a neighborhood small park and recreation space. Adjacent commercial district along Rizal street adjoining residential neighborhood.



Figure 20: An aerial view of the Poblacion

In the proposed Land Use Plan, it is this expanded poblacion area that defines the Poblacion Growth Center.

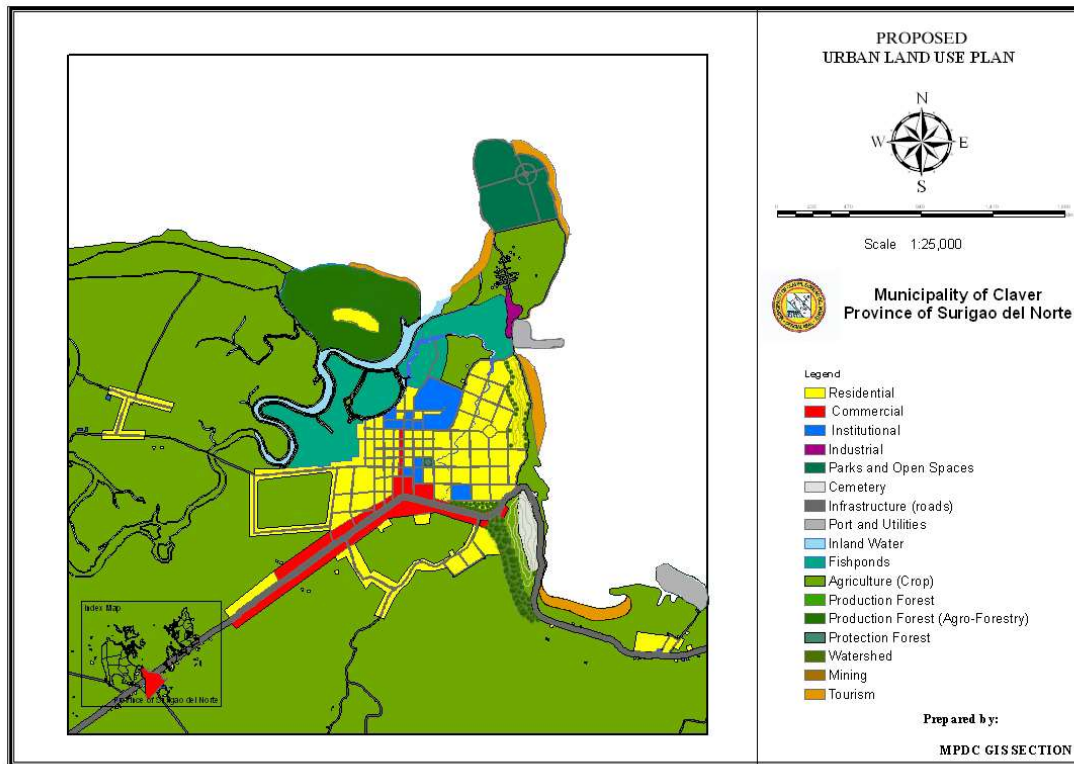


Figure 21:Proposed Urban Land Use Map

This Growth Center will function primarily as the Financial and Business District of the municipality. Low to medium density mixed uses be allocated for the tertiary sector such as wholesale and retail trade, banking and finance, personal and community services, transportation and telecommunications, and tertiary schools. Similar policies will be applied to hospitals, RHUs in the area.

Meanwhile, a proposed new townsite in the eastern section of the municipality will soon be realized. Initial site analysis and planning considerations has been exerted to procure these sites. Existing municipal roads will traverse to the proposed site and street pattern should be designed to discourage through traffic. Heavy planting should be provided along the highways on the southern side of the proposed site. Rear lot lines or local access road should be provided parallel to the highway and screened from it by planting.

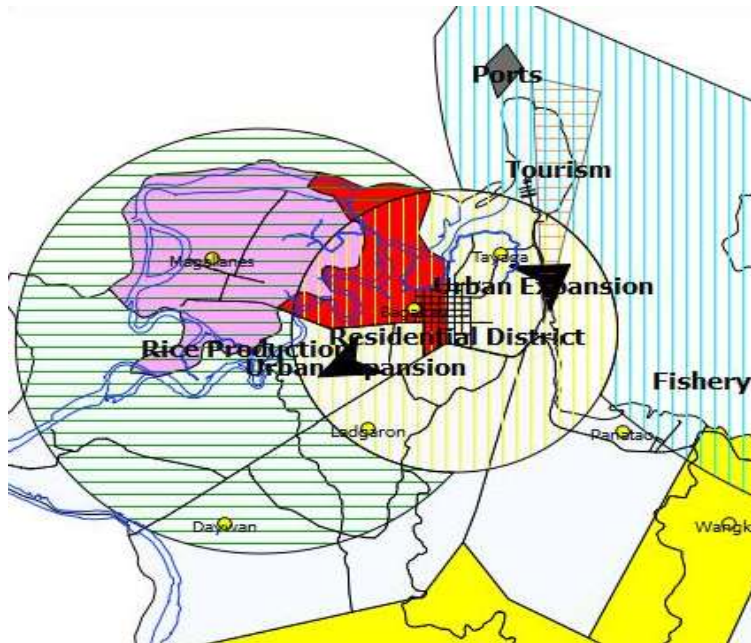


Figure 22: Urban expansion

While some center of social and political life will slowly be distributed to the designated growth centers. However, the four existing focal points of the municipality namely, the municipal hall, the church, the school and the municipal plaza will remain as symbolic landmarks of the Claver's heritage.

The Municipal Hall Building, in particular, will be reconstructed on the same location and will only accommodate the basic service-oriented offices.



Figure 23: A proposed 3-Storey Municipal Hall

Provisions of access to structures in an expeditious, attractive, and safe manner. Comprehensive analysis when it comes to building elevation, drainage, and other utilities to mitigate flooding and other environmental hazards.

Wet market will be transferred from Clarin Street to Honrado Street leaving the area to be occupied by tricycle/terminal expansion.

Other measures to strengthen the function of the Poblacion Growth Center as the Financial and Business District of the municipality in the short to medium term include the following:

- 1) Improve the flow of vehicular traffic and pedestrian safety and convenience by a combination of measures such as: Providing off-street parking and strictly prohibiting curbside parking along major roads.
 - a) A terminal by public utility jeepneys occupying almost half of the block. The remaining area can be converted into a public pay parking area.
 - b) Defining the function of existing streets and providing the necessary directional signs.
 - c) Constructing new links to avoid dead-end effects and to divert through traffic.
 - d) Recovering the sidewalks for the pedestrians by clearing away illegal encroachments, covering open side drainage canals, and requiring owners of permanent structures that had encroached on the road lots to provide arcaded walks.
 - e) Providing pedestrian facilities for the handicapped and elderly such as access ramps on all public and private institutions and commercial establishments as well as properly designed crosswalks at strategic locations.
- 2) Enforce anti-littering ordinances and encourage every resident to maintain cleanliness in their premises.
- 3) Improve the over-all image of the municipality by acquiring land to be developed into pocket parks and linear parks. Require owners of structures along major roads to plant broad-leafy trees; the particular species and distance between trees to be specified by the MPDO.

- 4) Enhance historical landmarks such as the old church and adjacent sports plaza to be converted into state-of-the-art sports complex with open spaces and planting strips as buffers to nearby residential units.
- 5) Develop potential tourism sites specifically along coastlines in Sampaguita through public-private partnerships.



Figure 24:Claver Beach Resort

5.1.2 Mining Barangays (Taganito, Hayanggabon) Growth Center

In recent years, Barangays Taganito and Hayanggabon becomes the host of major development sprouted in the Municipality. The area was once a predominantly idle-forest rapidly transform into an income generating barangays. Despite its severely constrained buildable land, socio-economic activities in the area have increase tremendously.

The areas are characterized by linear development along coastlines owing to the topographic character of these barangays. Business establishments for wholesale and retail trade, banking and finance, skills training center, and industrial park.

Increasing trend for population means faster rate in terms of housing demand. Resettlement sites for indigenous people, lodging houses and inns, apartments and motels shall be addressed in a coherent manner. Linear and grid type of development along national highways and secondary roads shall be pursued with the following considerations:

- Encroachment on mineral and public land, unplanned and unregulated type of mixed-used strip development along corridors shall be avoided.
- Hazards brought by mining activities, landslides, siltation and erosion, air and water pollution shall be mitigated. As a result, health hazards and risk to life and property shall be reduced.

The major features of this area will be arranged according to a linear plan that is oriented towards a central park. Interspersed between these main features will be mixed uses compatible with the dominant institutional use including retail shops, dormitories, restaurants, private clinics, miscellaneous services, and the like. A network of parks and open spaces, tree-lined roads, and pedestrian pathways will serve as the unifying element that will link all three features into a cohesive whole.

Surrounding the core of institutional complexes are the following:

- a) Residential areas open to all types of socio-economic groups located in the periphery of the node.
- b) A proposed central PUJ terminal will be situated at the junction of National Highway to cater to local public utility vehicles.
- c) The proposed 100-meter right-of-way of the Taganito River floodway will be landscaped on both sides and integrated into the node's network of linear parks.

The construction of roads and other support infrastructure is crucial to the realization of the long-term spatial development proposed for the growth center. Therefore the necessary surveys and studies shall be conducted to firm up the proposed plan. Opportunities for public-private partnerships in the implementation of the plan will be explored.

5.1.3 Poblacion - (Ladgaron-Daywan) Growth Corridor

The entire stretch along Daywan and Ladgaron from Daywan Bridge to the portion below public cemetery outlines the extent of the growth corridor. Land uses recommended for this corridor include mixed use commercial establishments, primary and secondary schools.

5.1.4 Built-up Areas Outside the Growth Centers/Corridors

The preceding section describes the proposed development for the various growth centers and corridors. Meanwhile, built-up areas that are not located within the designated growth centers and corridors will be described in this section. The broad land use category known as built-up areas include residential, institutional, commercial, industrial, and recreational uses. Table 4.3 provides a sample. It presents the pattern of developments in the different barangays located outside the identified growth centers and corridors:

Table 4: Built-up Areas Outside the Identified Growth Centers and Corridors

BARANGAY	PATTERN OF DEVELOPMENTS
Magallanes and Lapinigan	<ul style="list-style-type: none"> • ribbon type development along the roads; predominantly low density residential; self-built housing set against a rural environment; • wide expanse of unproductive croplands in the interior left idle; • illegal settlements along coasts, near rivers and its tributaries • a few institutional structures: public elementary school, BFAR Model Fish Farm, a public cemetery; • recreational facility: Capture fishing
Panatao, Wangke and Cabugo	<ul style="list-style-type: none"> • linear development along the road; relatively dense • fisher-folk settlements: houses on stilts along the coastlines; makeshift and a few semi-permanent structures on land arranged in a haphazard manner; • institutional structures: barangay halls, barangay health centers, barangay day care centers, public elementary schools
Cagdianao and Urbiztondo and Cagdianao	<ul style="list-style-type: none"> • relatively dense residential development; structures made of permanent materials located along national highway and local roads; • narrow dead-end roads linked to the local road provide access to the interior lots • a few institutional buildings: public elementary schools, barangay hall, barangay day care center, barangay health unit;

The strategy for these areas will be to maintain these areas as low density and low impact development while improving the support infrastructure and protecting environmentally-sensitive areas from encroachment. Dominant land uses in these areas will be limited to low-density residential development, barangay level institutional facilities, low level commercial establishments, barangay sports and recreational facilities, and support transport and utilities infrastructure. Zoning measures will be strictly enforced to regulate ribbon developments and to direct development away from environmentally-sensitive areas such as danger zones, river easements, salvage zones, and the like.

CHAPTER 6

6.0 Open Spaces

6.1 *Municipal Plaza and Park*

Popularly known as ClaverMunicipal Park occupies the entire block adjacent to the Municipal Hall. The natural site features as shade trees, interesting ground forms with various plant species, landscaping and rock outcrops, fountains and man-made falls which serves as a focal point of the park. The site also has accessible public shelter, a stage for multi-purpose activities, storage for equipments and maintenance, toilet facilities, and commercial stalls. One side of the park along Honrado street is allocated to parking.

6.2 *Reserves*

Forest land being classified as protection forest containing watersheds/or potential watershed should highly be protected at all cost. Further mineral exploration and any illegal activities within these identified sites is strictly prohibited.

6.3 *Neighborhood Parks*

A proposed park in brgy.Taganito and Hayanggabon could be an ideal buffer zones from industrial activities within these barangays.

6.4 *Municipal Sports Plaza*

The old historical sports plaza will be converted into state-of-the-art sports complex that can provide maximum seating capacity for a large variety of events. Space requirements and other support facilities had to be considered in the planning process. Open spaces and planting strips around the entire block which will serve as buffers to neighboring residential units.

However, land acquisition is under negotiation by the LGU on specified site for appropriate developments on this purpose.

CHAPTER 7

ROAD NETWORK

7.0 Circulation Network

7.1 *Ingress and Egress (in and out of the Municipality)*

Means of transportation will be by land and sea. Various routes whether it be short or long distances is generally reliable. Highway network in going in and out to nearby regions and cities has comfortable and efficient public transport such as buses and van for hire. Secondary and arterial roads has motorcycles and tricycles available. A port in Brgy. Hayanggabon has a boat that offers day trip schedule to neighboring islands.

7.2 *Circulation (within Municipality)*

A terminal located adjacent to highway could serve the increasing “urban sprawl” in the area. PUV’s, jeepneys, tricycles, and motorcycles can bring you to different parts of the municipality.



Figure 25:Terminal-Commercial Building

7.3 *Links Between Proposed Growth Areas, Non-Growth Areas (Linkages)*

Localized motorcycles (habal-habal) can be an effective mode of transportation in travelling a hilly and muddy areas going to the most remote barangays in the municipality. A 5-10 seater pumpboat can be used in going to Brgy. Lapinigan which is the only island barangay of the municipality.

CHAPTER 8

COMPREHENSIVE LAND USE PLAN

8.1 Urban Land Use Policies

- Mixed uses shall be allowed in order to maximize land utilization.
- Access to second lot depth property particularly in the urban corridor development strip.
- Structures built on flooding susceptible area must be elevated to the highest flood water level.
- Maintain open spaces in each property.
- Land development must be in conformity and with due consideration of the whole urban system in the advent of any land alteration.
- Building height must be limited to 10 meters and can be increase with due consideration of density regulation, parking requirement, easement and other buffer regulations.
- Urban development along the identified corridor must observed proper setbacks.
- Any urban development must secure conversion clearance from the Department of Agrarian Reform.

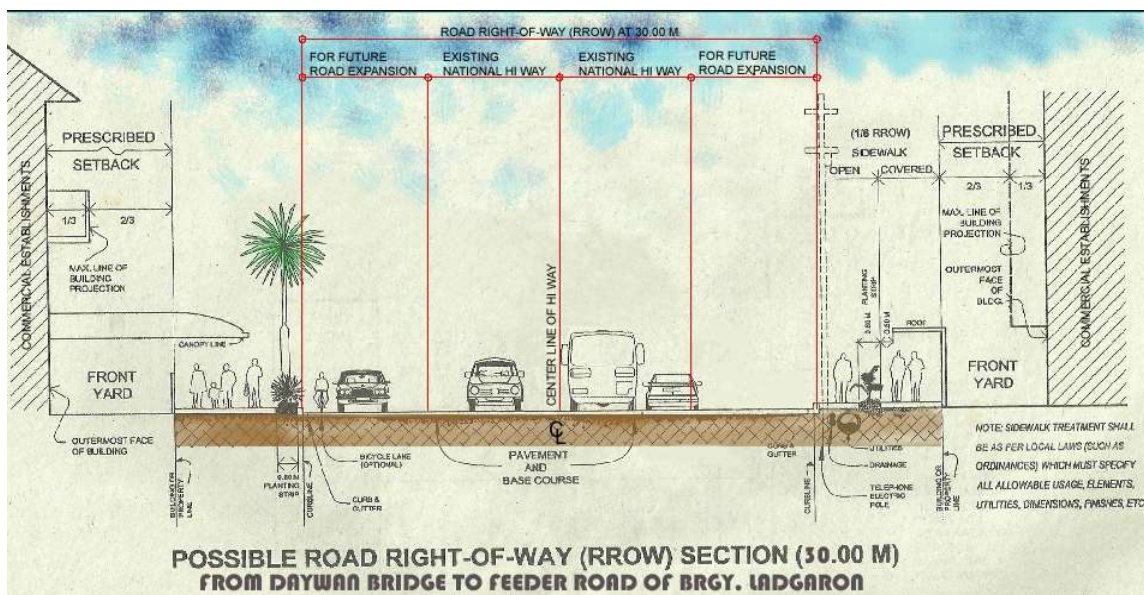


Figure 26: Standard setback of National Hi way (Davao-Surigao Coastal Road)

Note: floor elevation of every structure should be equal or higher than the National Hi way

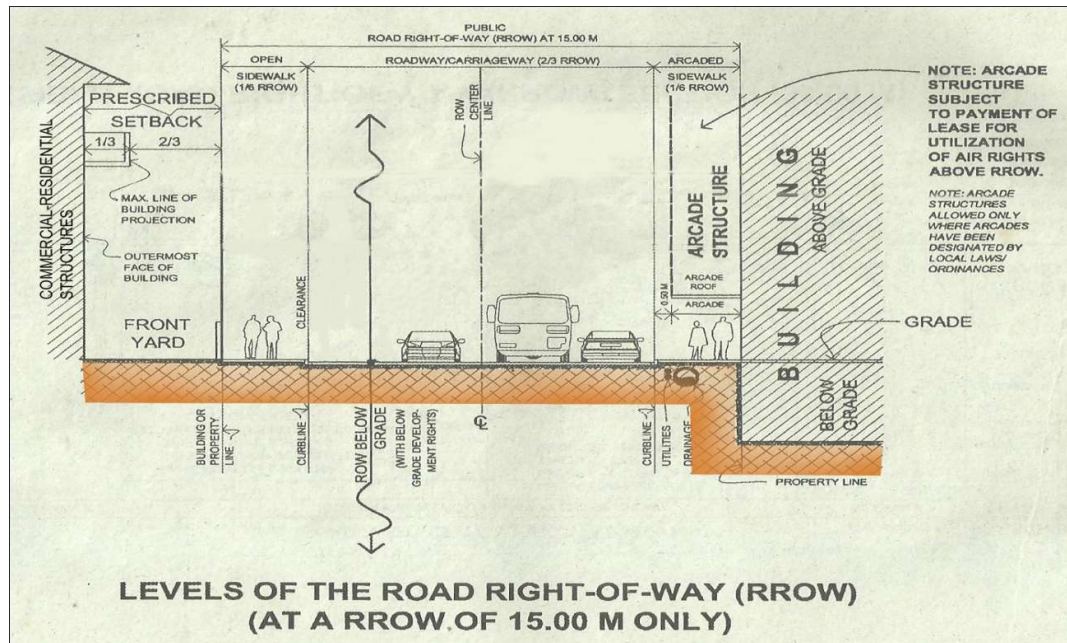


Figure 27: Road Right-of-Way on Minor Roads specifically Municipal Roads

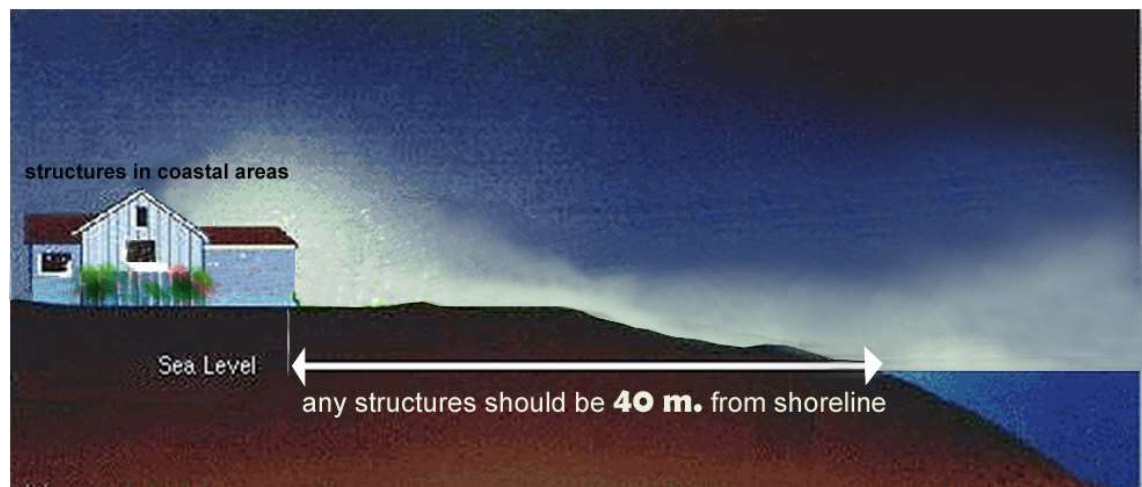


Figure 28: Structures within coastal areas should have a minimum setback of 40 meters from the shore.

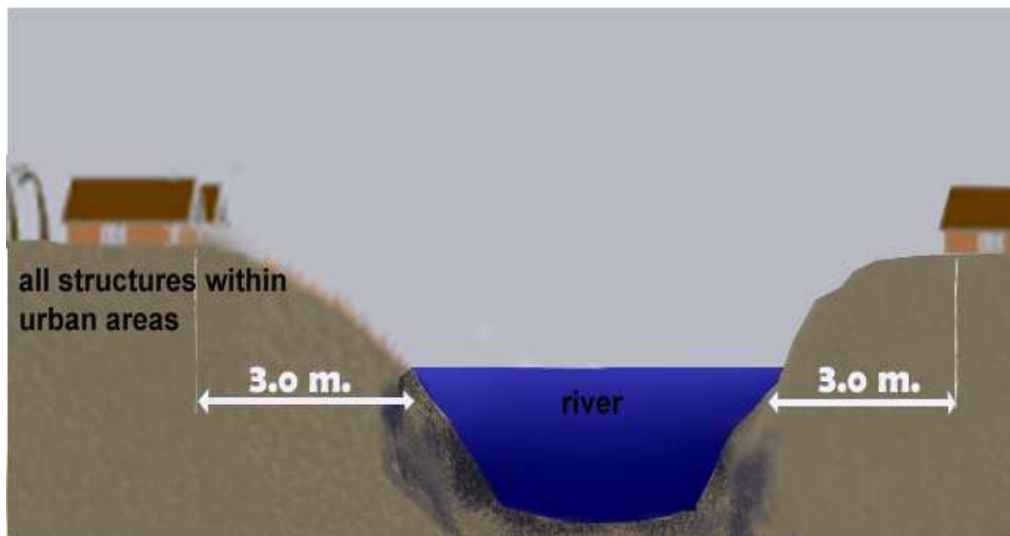


Figure 29: Structures within urban areas should have at least 3.0 meters setback from the river

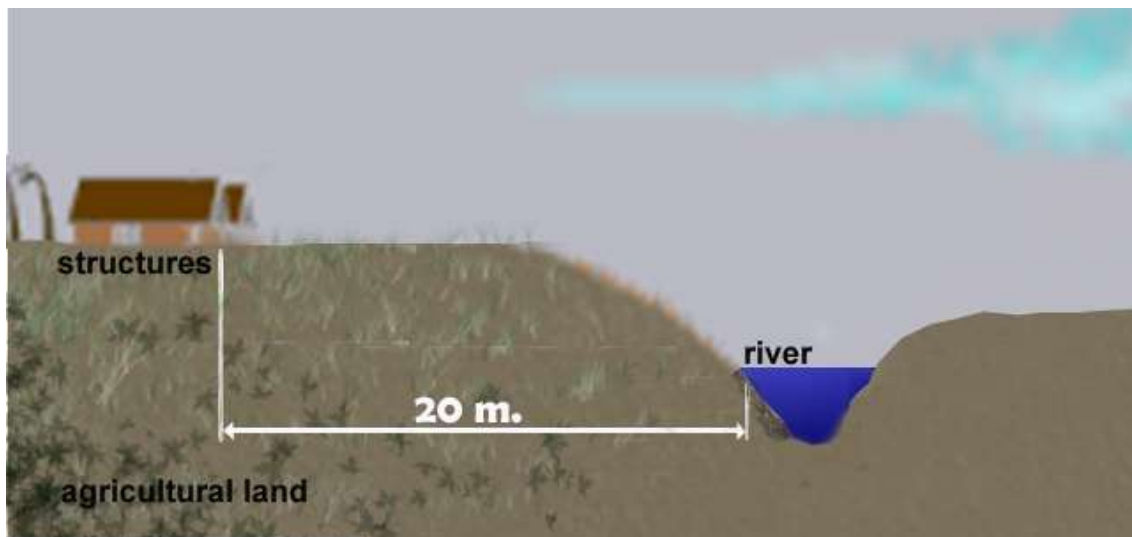


Figure 30: Structures located in agricultural land should have a minimum setback of 20.0 meters from riverbanks

8.2 Infrastructure Land Use Policy

Buildings and Infrastructure shall be informed by hazards and risk information. Site selection shall always consider hazard risks as one determinant in planning for safe locations of buildings and facilities.

- i. Site selection should be informed by flood information.
- ii. Sites shall be located away from high hazardous prone areas.

- iii. Buildings shall be designed for earthquakes with appropriate standards for access, open spaces following the Philippine National Building Code and best practices.

Economic Infrastructure

The municipality has three (3) major economic infrastructures which include the commercial centers, public market and the integrated transport terminal. The commercial center accommodates different kind of business establishments such as internet café, food stalls, dry goods, school and construction supplies to name a few. The public market is occupied with designated stalls selling variety of fish, fruits and vegetables, meat and its by-products and root crops. Meanwhile, the integrated transport terminal is already operational.

1. Public Markets – In line with the municipality's thrust to disperse economic activities from the traditional urban center, multi-sectoral action should focus on the selection of appropriate sites for the barangay food terminals in the different growth centers. This will require the following activities:
 - i. Site selection;
 - ii. Detailed technical survey and mapping;
 - iii. Master development planning, to include conduct of a market study to determine market prospects as well as economic/financial feasibility study of the project, site development planning, development phasing and programming plan;
 - iv. Business development planning, including investment programming;
 - v. Plan implementation, to include land acquisition, plan monitoring and evaluation, among others.
2. Fish Landing and Fish Market Complex with Cold Storage - Determine the feasibility of such as a facility, the same activities as in item 1 above will be conducted.
3. Slaughterhouse – this facility will be used for the local market and will be planned in accordance with the requirements of the National Meat Inspection Commission, related policies of the Department of Agriculture, and standards set by the National Building Code. In determining the

feasibility of such as a facility, the same activities as in items 1 and 2 above will be conducted.

Social Infrastructure

1. Public Schools – Actions from all stakeholders should prioritize land acquisition preferably of adjacent lots to accommodate future expansion and construction of school buildings to accommodate increasing student population. The growth centers will provide new sites for proposed secondary school campuses. Local legislation will ensure that planning guidelines for school building construction include the following:
 - i. Location should be away from the national highway which is generally prone to accidents.
 - ii. Site should be flood-free, elevated and with efficient drainage system.
 - iii. Vertical development and expansion should be encouraged.
 - iv. There should be enough space to accommodate projected student population.

Public action will ensure that budget allocation from the Department of Education and LGU will augment the Special Education Fund (SEF) for the development of the new sites.

2. Private Schools – The expansion of private schools will be redirected towards identified growth centers within the city. These new sites will be planned and developed in accordance with a supplemental local ordinance to the National Building Code containing campus planning and design standards.
3. Non-Formal Educational Facilities – Legislative action will take the form of a request for the establishment of a proposed secondary trade school with the objective to prepare the graduates to engage in income-generation activities.
4. Health Centers – Additional units of these community facilities will be made available in all major barangays to make health care and medical services and facilities accessible to all the local residents.
5. Day Care Centers – Legislative action should focus on land acquisition or rental of space for such a service. Policy agenda should encourage the private sector and other public offices to set up a child-minding facility within their premises.

6. Public Libraries and Archives in the growth areas will be a priority. A program to put up and modernize existing public libraries in the municipality will be adopted.
7. Sports and Recreational Facilities – This community facility should be established in all growth centers through public-private partnership. It should be co-managed by the Department of Education and the LGU. Legislative action should require public schools to open their sports facilities for use by the residents outside of school hours.
8. Private Recreational Facilities – Public action will focus enforcement of, and ensuring their compliance with fire safety standards. Legislative action will increase sanctions and penalties for violations.
9. Public Assembly Areas - These facilities will serve as functional elements in the municipality's network of open spaces.
10. Memorial Parks and Cemeteries – These are located in Brgys. Ladgaron, Tayaga, Panatao, Cabugo, Urbiztondo and Taganito. Legislative action should generate development guidelines for the establishment and maintenance of cemeteries and memorial parks.

Administrative Infrastructure

1. Government Center – The policy of the municipal government through administrative and legislative actions will include the following:
 - i. Site selection;
 - ii. Detailed technical survey and mapping;
 - iii. Master development planning, to include conduct of an economic/financial feasibility study of the project, site development planning, development phasing and programming plan;
 - iv. Business development planning, including investment programming; and
 - v. Plan implementation, to include land acquisition, plan monitoring and evaluation, among others.
2. Barangay Halls – the thrust of the Municipality is for all barangays to have a multi-purpose barangay hall. Public action will include the following:
 - i. Prepare standard design requirement for a multi-purpose barangay hall

integrating other facilities such as a health center, day care center, social hall, chapel, cooperative shops, etc.

- ii. Inventory/survey of the existing condition of barangay halls and other facilities in the city;
 - iii. Identification of potential sites for barangay facilities and possible land acquisition arrangements; and
 - iv. Strictly enforce guidelines regarding the location of barangay halls. In lieu of new building construction, another approach is to identify a strategically located area where a building can be put up to serve a cluster of barangays.
3. National Government Agency Offices Clustering - Public action will entail the clustering of existing NGA offices within the various growth areas in city based on their function. The clustering will be as follows.
4. Public Order and Safety Offices – The fire protection, peace and order facilities and disaster management system is located in Brgy. Tayaga. Enactment of an ordinance prohibiting the obstruction of identified fire truck access lanes, and requiring new buildings to be designed and constructed based on environmental considerations unique to the municipality.
5. Ecological Waste Management System facility – Legislative action should require the enactment of an ordinance requiring segregation and composting at the household level and the setting up of such a system that will include the following:
- i. Ecological Waste Management Center, with a sanitary landfill
 - ii. Materials Recovery Facility (MRF)
 - iii. Composting areas

In this connection, legislative action should also include the banning or prohibition of backyard burning anywhere in the municipality.

8.3 Production Areas Policy

Production areas are those with relatively few constraints to their continuing use for production purposes. These areas are capable of sustaining intensive and multiple uses primarily intended for the production of food and cash crops or the extraction of natural resources for their economic value. Through this CLUP, the

production areas will be used and managed according to sound environmental and cultural practices. The production areas in the municipality include the commercial area or business district, agricultural croplands, fishponds, tourism and recreational areas, and the industrial area.

a. Commercial Areas

1. Poblacion Growth Center

This area encompasses the traditional central business district (CBD) consisting of poblacion barangays of Bagakay and Tayaga. Encompassing the municipality's financial and business district, land uses within the business district and along national highway comprises of low to medium density mixed uses such as wholesale and retail trade, banking and finance, personal and community services, transportation and telecommunication, and tourism related uses. Existing academic institutions and hospitals will be allowed to remain but their expansion will be directed to the other growth centers.

The policy agenda for this area will focus on its regeneration or renewal not only to revitalize the local economy but also to improve the quality of life within the urban framework. The following policies are hereby adopted to strengthen the poblacion growth center:

- i. Creating a more favorable investment climate;
- ii. Updating of the tax data base of the municipality through tax mapping and strengthening of revenue code

Through urban renewal as the policy to spur growth in the area, public intervention may include not only measures to encourage and direct private investments toward revitalization efforts but also acquisition, clearance, relocation and redevelopment by the municipal government itself. Public intervention to modify or influence appropriate land uses within the poblacion may also include a range of policy or legislative activities on the following:

- i. Land banking to forestall inappropriate developments on an unplanned basis;
- ii. Integration of open spaces into the design of the built-form to enhance urban aesthetics thus, maintaining property values;
- iii. Investment in economic development activities to create more employment opportunities;

- iv. Improvement in the quality of services of the local government;
- v. Design or develop guidelines on outdoor signage; traffic management schemes; building height limit based on geotechnical studies; threshold capacity of utilities, potential traffic generation, among others.

b. Industrial Area

Taganito High Pressure Acid Leach (THPAL) processing plant has already started its operation intended for the extraction of nickel and iron from the lateritic soils of Brgy. Taganito. This multi-billion plant is under an exclusive special economic zone. Three (3) major mining companies are also located in Brgy. Taganito and its adjacent barangays of Urbiztondo and Cagdianao.

Outside the industrial park, non-pollutive/ non-hazardous and non-pollutive/hazardous industries may be integrated within the municipality's commercial areas.

Multi-sectoral action in coordination with concerned national agencies should focus primarily on the formulation and implementation of environmental and sanitation policies and ordinances.

c. Agricultural Areas – Croplands

The general policy with respect to croplands not covered by protection policies is to maximize their productivity through crop diversification. Owners of idle lands suitable for agricultural purposes will be encouraged to invest in high value crop production through government-initiated programs that provide credit assistance and financial incentives. Legislative action will focus on encouraging land owners to make their lands productive again through the enactment of special levies on idle lands and ordinances that support public-private partnerships in agricultural development.

Specific areas affected by this policy will be barangays Daywan, Ladgaron, Sapa, Magallanes, Panatao, Wangke, Cabugo and Lapinigan.

d. Agricultural Areas – Fishponds

Fishing industry especially inland aquaculture is not a promising venture to engage with. The area suitable for fishponds is insignificant and the volume of production is considered not profitable.

e. Tourism and Outdoor Recreation Areas

Policy action towards developing the municipality's tourism and recreational potentials is the formulation of a municipal-wide tourism plan that will lay down the necessary guidelines for the use and development of certain areas for tourism and recreational purposes.

For identified eco-tourism sites such as Kabajuan Islet in Brgy. Lapinigan, Malinawa Cold Spring in Brgy. Sapa, Lambason Islet in Brgy. Cagdianao, Alingkakajawlslet in Brgy. Taganito, protective policies should be formulated to preserve and promote tourism spots in the municipality. Support facilities such as hotels and convention facilities, better transportation, restaurants, shopping centers, souvenir shops, tourism information office should be established through public-private partnership (PPP) arrangements initiated by the LGU and private sectors.

f. Municipal Waters

Immediate delineation of municipal waters should be done to prevent conflicts between adjacent municipalities in terms of important resources. An extensive network of municipal waters consisting of primary, secondary and tertiary rivers as well as marine waters should be laid out through maps.

Municipal waters are considered part of production areas because the management, conservation, development, protection, utilization, and disposition of all fish and aquatic resources within these areas are the responsibility of the LGU, as provided for in the Philippine Fisheries Code of 1998 (RA 8550, Sec. 16).

The municipal government has the exclusive authority to grant territorial rights for fisheries and regulate issuance of licenses for operation of fishing vessels of three (3) gross tons or less (RA 7160, Sec. 149).

For this purpose the Sangguniang Bayan (SB) shall enact unified fisheries ordinance, specifying, among other things, the limit of river surfaces that may be utilized for fish pen operations or erection of fish corrals or fish cages. The ordinance shall likewise designate and demarcate navigational lanes which should be kept unobstructed at all times (RA 8850, Sec. 55).

In the case of the marine water component of the municipal waters, the SB shall take action on two (2) areas of concern:

g. Decide on whether or not to allow small and medium commercial fishing

vessels to operate within the ten point one (10.1) km to 15 km area from the shoreline of the covered municipal waters pursuant to Sec. 18 (RA 8550).

- h. Initiate the process in coordination with the Bureau of Fishery and Aquatic Resources, Provincial Fishery Office, Municipal Environment and Natural Resources Office (MENRO), Philippine National Police (PNP) and other agencies abutting on jurisdiction of municipal waters pursuant to Sec. 16 (RA 8550). Among the possible matters requiring consideration are a) delineation and delimitation of municipal water boundaries; b) enactment of a unified fisheries ordinance, c) color coding of municipal fishing vessels, and d) integrated enforcement of fisheries laws, ordinances, rules and regulations.

8.4 Protected Areas Policy

It cannot be denied that the protection or conservation of the municipality's limited open space resources is difficult in the light of competing urban demands on limited land supply. The municipality's available open spaces are threatened by urban development and expansion as well as mining and quarrying operations.

In its larger sense, despite the threat and risks attached to it, certain policies and strategies should be undertaken. One of which is the consideration of these open spaces in relation to the physical pattern and economic growth trends to which it is a part of. Thus, legislative measures and community actions conforming and adoption of the national laws and policies in preserving the protected areas are being undertaken.

Protected areas include the proclaimed areas; identified environmentally-constrained areas that are prone to liquefaction and ground shaking, RIL areas, EIL areas floods, and storm surges; selected croplands, fishponds, and marshlands, and all road easements, and historical buildings and their sites.

Emphasize strict protection activities in protection forest area such as areas with slope above 50%, with elevation 1,000 meters above sea level and over 20 meters strips both side of the river with channel 5 meter and wider and 3 meters in urban areas and areas identified community watershed.

The following are issues worth considering in protecting the protected areas in the municipality:

1. Flood-prone open areas (agricultural areas)
2. Erosion/Scouring
3. Encroachment of Informal Settlers
4. Siltation/ Swallowing /Thinning of rivers

5. Water and Air Pollution
6. Conversion of agricultural lands for commercial and residential uses
7. Reclamation of Coastal/Foreshore Areas and Waterways

Through this CLUP, protected areas are recognized as vital component of an orderly urban environment that serves many irreplaceable functions. In establishing and expanding the municipality's network of protected areas, the LGU will have to adopt the following measures:

1. Conduct comprehensive inventory of existing and potential protected areas covering both public and private lands.
2. Develop planning parameters with emphasis on linkage and continuity.
3. Consolidate past policies, plans and programs that are still relevant to the formulation and adoption of a municipal development program on protected areas.
4. Cultivate mass support for protected areas preservation.
5. Integrate into the building code and zoning ordinance with their innovative approaches so that building developments do not disturb existing and proposed protected areas.
6. Integrate protected areas into the municipality's proposed road system.
7. Adopt a policy of cooperation and collaboration with concerned land owners to monitor and guide future action or decision to protect, conserve or develop these resources.
8. Formulate incentive packages for voluntary conservation arrangements between landowners and the local government.
9. Acquire open spaces for public recreational purposes.
10. Refocus preservation on the following open spaces: natural drainage corridors and waterways, existing natural parks and playgrounds, aquifer and recharge areas.
11. Installation and maintenance of protective structures e.g. driving sheet piles, dikes, boulders, ripraps, planting of bamboos at riverbanks.
12. Coordination with concerned agencies e.g. DENR-EMB for the strict

compliance of environmental laws and administrative issuances of ECC or CNC; DAR and DA to assist resolution of issues on agricultural land conversion.

The following areas should be identified if it is a subject of protection and conservation policies:

- Proclaimed Areas

Karaang Banwa Marine Sanctuary covering 30-hectares is the only proclaimed area supported via an ordinance. It is located in Brgy. Urbiztondo, one of the coastal barangays in the municipality. The watershed of Silopan Spring in Brgy. Daywan, the main source of potable water for poblacion consumers will be proclaimed anytime soon through local legislation. Potable water sources for each barangay is also due for proclamation and delineation through their barangay council.

The Malinawa Cold Spring in Brgy. Sapa is seen to be a highly potential source of potable water for the whole municipality. This spring is also eyed for eco-tourism development.

To preserve functional character Karaang Banwa Marine Sanctuary as a breeding ground for fish and other marine organisms; and Silopan and Malinawa springs and other water sources, the policy intervention for these areas will include restrictions on the following acts:

1. Dumping of any form of waste products;
2. Illegal fishing activities such as the use of dynamite, *boso* and cyanide poisoning, commercial fishing (*liba-liba*);
3. Collection and gathering of mollusks (oysters and clams) and other shells;
Mutilating, defacing or destroying objects of natural beauty, or objects of interest that enhance the area's scenic value;
4. Damaging and leaving roads, trails and footpaths in a damaged condition;
5. Squatting, or otherwise occupying any land;
6. Constructing or maintaining any kind of structure, fence or enclosures, establishing any business enterprise without a permit;
7. Leaving in exposed or unsanitary conditions refuse or debris, or depositing them in the ground or in bodies of water; and
8. Altering, removing, destroying trees, grass, shrubs and other forms of vegetation or defacing marks or signs.

To effectively regulate all land use activities within the proclaimed areas, it will be sub-zonified into management zones based on physical or environmental considerations. A strict protection zone shall be established which limits all forms of building development and certain human activities. In areas where permanent buildings already exist, any expansion will be regulated by local authorities via enforcement of performance standards on building height and bulk, density, open space ratio and traffic impact.

To provide a basis for appropriate policy intervention, a management plan shall be prepared to guide human activities within each sub-zone covering the entire proclaimed area and, to a reasonable extent, its adjacent areas. Through a participatory and consultative process, the formulation of the management plan will include the following activities:

1. Detailed technical survey, mapping and land marking;
2. Inventory of existing uses;
3. Development planning; and
4. Plan implementation, to include social preparation, enforcement, monitoring and evaluation.

The plan will form part of a municipal-wide open space recovery and development program that will be implemented in consonance with this CLUP.

- **River Easements and Salvage Zones**

The municipality has an approximately 50 kilometers of coastline extending from Brgy. Magallanes on the west to Brgy. Cagdianao on the southeast. The municipality's salvage zone has a potential area of about 10 hectares. However, this area has not been delineated yet. In the context of a management plan that shall protect, rehabilitate, and develop the municipality's foreshore area, the limit of the salvage zone and beach front shall be distinguished on the ground.

- **Environmentally Critical Areas**

These areas are prone to natural hazards either hydrologic or geologic in nature. Although settlement development has occurred and continues to occur in these locations, this can be prevented in the future through the adoption and implementation of open space development program of the municipality that will restrict certain developments or human activities in areas that pose environmental hazards or risks to human settlements.

One of the major hazards in Claver is mining and quarrying activities that causes diversion of river flow. It can be minimized by adopting responsible mining and quarrying.

In the municipality, areas frequently exposed to weather and water-related hazards such as storm surges will be surveyed and delineated on ground. As much as possible, these areas will be kept in their open natural state and, if built upon, restricted to controlled developments. In the long term, existing informal settlements in storm surge areas in SitioSabang in Brgy. Tayaga will be relocated to safer resettlement areas.

One of the major actions to be undertaken by the municipality to address problems arising from storm surges is the deployment of sheet piles. Tetrapods and other multi-legged varieties like accropode blocks and xblocs can also be installed to dissipate wave energy.

The entire municipality is prone to high probability of liquefaction. Compared to all other barangays, Brgy. Urbiztondo has low probability to liquefaction and Brgy. Cagdianao has low to high risk to liquefaction. A measure to minimize destruction and loss of lives resulting from ground shaking is for the LGU to strictly implement the National Building Code. In the future, building developers shall be required to undertake a geo-technical study as a prerequisite to secure a building permit.

In flood-prone areas especially, constructions of any structures on the river or river easement will be considered as illegal and subject to demolition proceedings. Also, the disposal of waste into the municipality's rivers will not be tolerated. Local legislation will focus on establishing stiffer sanctions and penalties to discourage these activities.

- Protected Fishponds

Fishponds are the main sources of bangus and a veritable source of income and employment, they must be protected from potential conversion. This is located in SitioSabang, Brgy. Tayaga. Areas for future development are insignificant considering the total production area of approximately one hectare and will not be threatened by urban demand.

- Protected Cropland

Protected croplands shall not be converted into urban land uses and shall be conserved to support a policy of maintaining some degree of self-sufficiency in selected food crops.

Only nine (9) are agricultural barangays whose soils types generally vary. Brgys. Magallanes, Daywan and Ladgaron, Sapa, Cabugo, Panatao, Wangke, Urbiztondo, Lapinigan. They will be properly delineated on the ground, classified based on soil suitability analysis, and mapped out to reflect their relative locations within the city.

These areas are planted with high value crops such as rice, coconut, watermelon, peanuts, mango, watermelon as well as a variety of vegetables such as ampalaya, eggplant, rootcrops and etc.

- Marshlands

Claver is one of the coastal municipalities in the province of Surigao del Norte. With this, the location normally suggests the presence of wetlands which may comprise of areas for mangroves and coral reefs. The mangrove areas are located in Brgy. Bagakay, Tayaga, Panatao, Wangke, Cabugo, Urbiztondo, Taganito, Hayanggabon and Cagdianao estimated to 20.14 hectares. Presently, the mangrove forests in the mining communities reduce due to reclamation and presence of washed minerals resulted from large scale mining operations. There is a reforestation effort conducted by the mining companies to one of the affected barangays – in Brgy. Urbiztondo with more than 500 mangrove propagules planted especially in Sitio Sabang.

Because they perform a number of important functions such as natural sedimentation basin and water purifier, the municipality's wetlands shall be protected from destructive non-conforming uses including fishpen operation. Through local legislation, activities within the area such as fishing and hunting, among others, will be regulated. Their potential value will be further explored to allow limited access to the area for recreational use and limited harvesting of mangrove and nipa products.

1. Conform with the national law on the protection of wetlands specifically the mangrove forests.
2. Conduct regular mangrove reforestation program.
3. Non disposal of garbage/solid wastes.