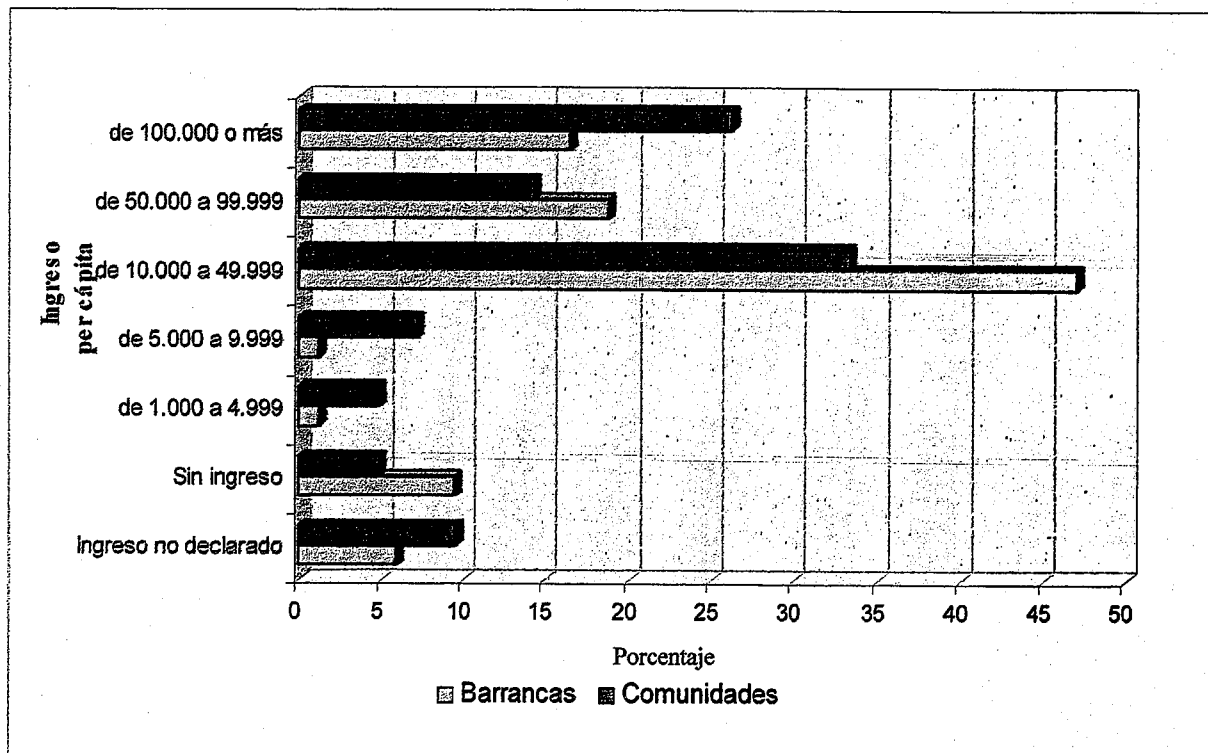


Graphic N° 4.17
HOME PERCAPITA INCOMES (Bs PER PERSON) ACCORDING TO RESIDENCE LOCATION



Nevertheless, in an effort to approach this information Chart N° 4.20 "Expenditure Structure" is shown. It can be seen there that food is the main item of expenses; 71% of the people asked answered that almost all their income is spent in food. The second item in expenses is health. Clothing and shoes, as well as school are the aspects that follow, and it should be pointed out that given the situational character of information gathering, it was possible to compile to a large extent the effect that the beginning of the school year has on the family budget.

Chart N° 4.20
Expenditure structure

Type of expenditure	Almost all %	Approximately half %	A small part %	Nothing %	Total %
Food	71	25	4	-	100
Health	8	11	43	38	100
Clothing and shoes	-	9	46	45	100
School	-	5	39	56	100
Transportation	-	2	22	76	100
Work teams	1	6	12	81	100
Housing	-	3	14	83	100

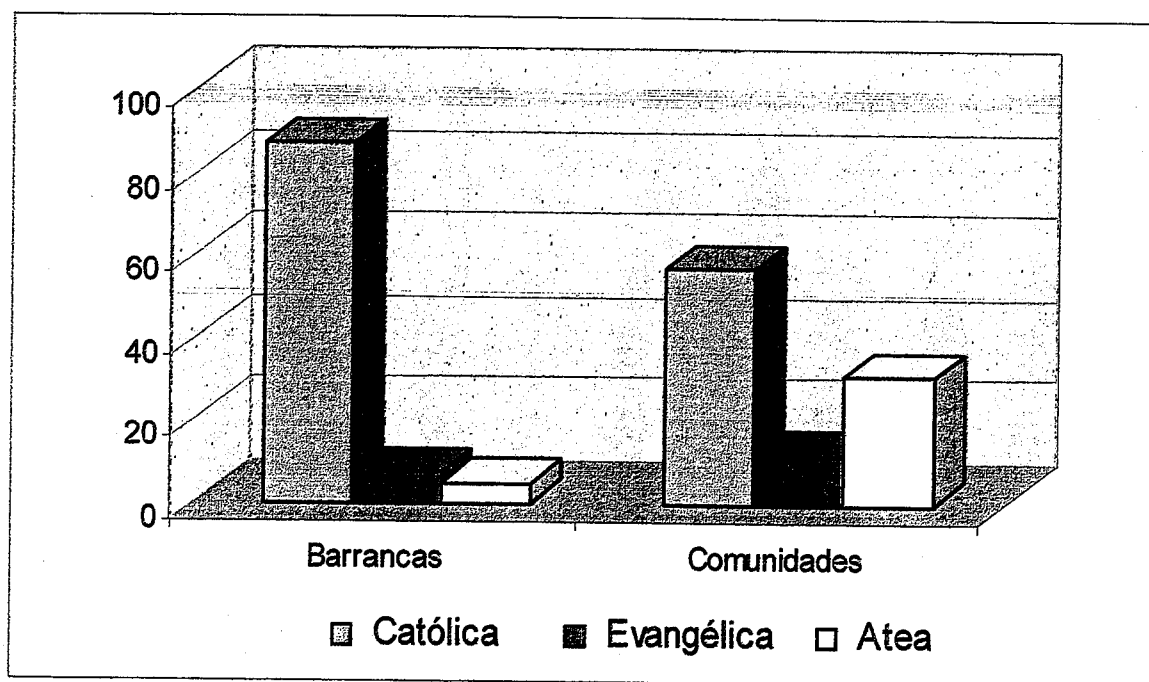
Transportation represents a low proportion of costs, Barrancas people usually walk or use bicycles; while in the communities they use curiaras (Indian boats) without motor or regular boats. Those persons of the communities that do not have a boat pay for a boat or move around with lifts given by friends. It was known that the City Hall of Casacoima offers certain service of public fluvial transportation.

- Religion

The religious behavior of the population being studied is similar to the standard behavior of the country. This means that there is a majority of Catholics and secondly Evangelicals. There is a curious fact in the case of the rural communities being studied and it is that 31% of these families said to be atheist, although some of them follow Catholic rites such as christening of children and the funeral rite and burial of their dead people (Graph N° 4.18 and Chart N° C-4.23 - Annex C).

Obviously, finding out about the reasons for this phenomenon is something that escapes the scope of this study. Nevertheless, it would be of great social and anthropological interest to make a study on the popular religiosity at the zone, and on the origin of such a high percentage of the populations

Graphic N° 4.18
HOME DOMINANT RELIGION AT BARRANCAS AND RURAL COMMUNITIES



of the rural communities saying they are atheists.

- Health

There is little data on health contained in the information gathered from the survey; nevertheless, it can be said that there is only a general hospital in Barrancas, which does not have the capacity to receive and take care of serious cases. It mainly takes care of emergencies and offers first aid in the most serious cases that end up being referred to any of the hospitals of the nearby cities (Maturín, Tucupita, Ciudad Guyana).

Likewise, in the rural villages, particularly Isla Varadero de Yaya, Isla Chivera, Apostadero and Barrancos de Barrancas, there is at least an ambulatory or public clinic that also covers emergencies and non very serious situations.

Another remark on this aspect is that although there are no exact figures, the population is still very young in age, it looks older and suffers from degenerative type diseases such as high cholesterol, high blood pressure, kidney deficiency, skin and gastrointestinal problems. The explanation to this phenomenon must be given by specialists in the area of health. Nevertheless, some speculation could be made by saying that maybe this situation is associated to the lack of a good preventive and curative medical care; in this sense, when people cannot go to a center that will offer a solution to their problems, they may make two decisions: either go to a health center in other neighboring cities, or to simply delay the medical attention. Another possible cause for premature aging of the population has to do with the precarious conditions of living, mainly in the rural communities, situations such as using the river water for personal consumption, although it is not pure, and the deficiency of an adequate nutritional balance in their daily life or the unhealthy conditions in which the majority live.

These are considerations derived from observations during the primary information gathering, and thus the statistical information that would be needed to explain in figures the reason for this phenomenon, is not available.

- Housing

Before describing the quality of houses at the area of study it is necessary to describe some of the defined categories for the type of housing:

Social interest Houses: Are those houses built by the public sector, such as INAVI and the Department in charge of malaria control, among others. These are simple houses but built in compliance with architectural standards, that is, they are made of block or bricks, the floor is made of cement or granite or similar materials, and the roof has concrete slab, roofing tile or similar materials.

Self-built houses in compliance architectural standards: are those houses of similar characteristics to the above described ones, but built by the inhabitants.

Self-built houses that do not comply with architectural standards: are those houses built by the inhabitants but without architectural standards. That is, zinc or cane plastered with mud and chopped straw, but built by the inhabitants.

The houses represent a considerable difference between Barrancas and the rural communities (Chart N° C-4.17 - Annex C). In Barrancas, 44% of houses are self-built in compliance with architectural standards, while there is a considerable percentage of social interest houses (39%) built by the department in charge of fighting malaria, of the Ministry of Health and Social Welfare (MSAS) and la CVG. Most of these houses have suffered modifications made by the inhabitants themselves.

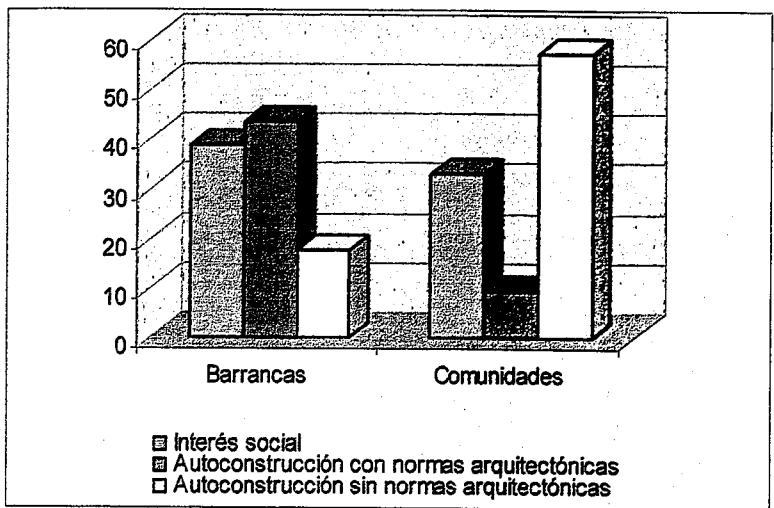
In the rural communities it can be observed that most houses are self-built, without complying with architectural regulations (57%), with a considerable presence of social interest houses (33%), mainly in Apostadero and the banks of Tórtola caño. (Graph N° 4.19)

Concerning their tenancy, most of them are owned, either because they have already been bought, or they are paying them, as in the case of social interest houses, or because they have built them themselves (See Chart N° C-4.18 -Annex C). It is important to make clear that the definition of ownership is based on the house as such, without greater considerations on the land where the house was built. In general these are State-owned lands.

Thus it can be seen that in Barrancas 91% of houses are privately owned, while in the rural communities this sector represents 95%. (See Graph N° 4.20 and Chart N° C-4.18 - Annex C).

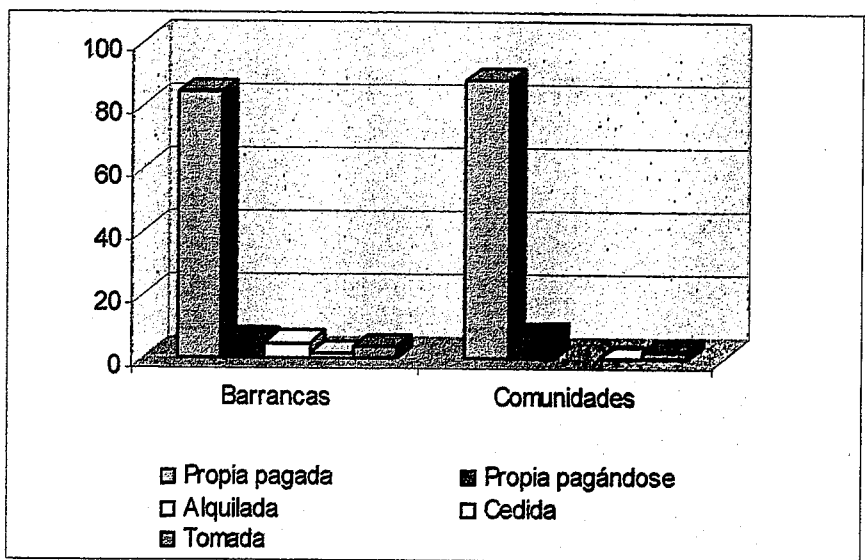
Graphic N° 4.19

TYPE OF HOUSE ACCORDING TO CONSTRUCTION BARRANCAS AND RURAL COMMUNITIES



Graphic N° 4.20

HOUSE OWNERSHIP, BARRANCAS AND RURAL COMMUNITIES



Lastly, the majority of houses in Barrancas have basic public services: water supply, electricity, garbage collection and public transportation. But the rural communities practically have none of these services, with the exception of communities such as Apostadero and Barrancos de Barrancas, none of the others have drinking water supply, water is obtained from the river and eventually from internal lagoons or wells built by the families for their own consumption. Likewise, the communities of Apostadero, Barrancos de Barrancas and Saladero have access to the public electrical network layout they get from Barrancas, but the other communities do not have this service. Isla Chivera and those communities located at the bank of Tórtola caño, have a power plant which not always operates, the remaining communities get their lighting by using kerosene or wax candles.

Concerning sewage and garbage collection, only one sector of Barrancas has this service, the other sector of Barrancas as well as the rural communities, have septic tanks or latrines, and in some cases they do not have either of them. Garbage is burnt or is simply dumped into the river.

The telephone and public transportation services only exist in Barrancas. In some rural communities, such as those located at the bank of Tórtola caño, in Mariche and in Apostadero, the use of vessels, such as barges or curiaras in the only one for transportation (bus type) across the River. These vessels mainly connect these communities with Barrancas North of the river and with Piacora South of the river. (See Chart N° C-4.24 in Annexes).

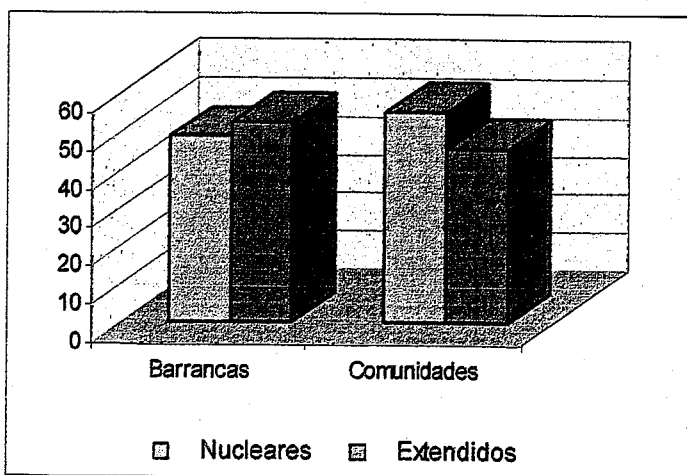
- Home

The homes of Barrancas are characterized for being primarily of large families (52%), while at the rural communities it can be observed that the majority are nuclear homes (55%). (see definition in methodological Annex). (Chart N° C-4.19 - Annex C and Graph N° 4.21).

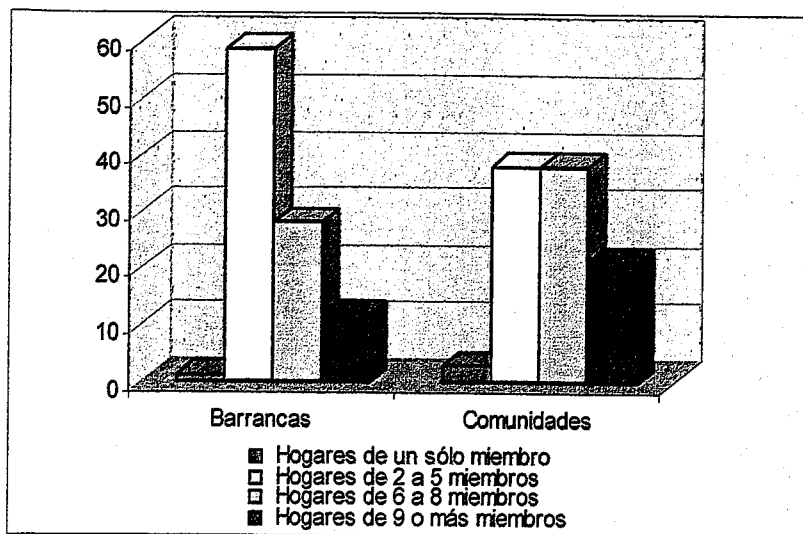
This means that in most homes of Barrancas, grandparents, brothers and sisters, grandchildren, cousins, nieces and nephews, couples and children live together. There are many homes in which the family head lives with the children who have also reproduced themselves. In general the presence of couples living together without being married was observed, although there were homes with single mothers.

Likewise, it can be seen that in 59% of the homes are made up of 1 to 5 members, while in the rural communities most homes have more than 5 members (59%). In general, there are very numerous homes. (Chart N° C-4.20 - Annex C and Graph N° 4.22).

Graphic N° 4.21
HOUSE ACCORDING TO THEIR COMPOSITION



Graphic N° 4.22
HOUSES ACCORDING TO THE NUMBER OF MEMBERS



In these homes, for each working member there are from 1 to 5 members that do not work (78%) on Barrancas and (79%) in the rural communities. This means that each working person has to share its income with at least 5 more persons, which points at a possible situation of poverty since the per capita income can be quite low. More details are given later on this subject. (Chart N° C-4.21 and Graph N° 4.23).

An aspect related to the number of home members and their composition, is the crowding of people (Chart N° C-4.22 - Annex C). This figure of crowding in the rural communities, where 79% of homes have that situation is alarming (Graph N° 4.24), it means that 3 or more persons sleep in one same room. This absolutely coincides with what has been observed when gathering information, since in the majority of homes visited there were only one or two rooms exclusively used for sleeping, and as it has been said, in these communities the majority of homes are made up of more than 5 persons. This situation is a quite clear indicator of the poverty levels and precariousness of this zone, especially when in most analysis of this type it is associated to others parallel, such as infectious contagious diseases, incest, among others.

- Existing Infrastructure

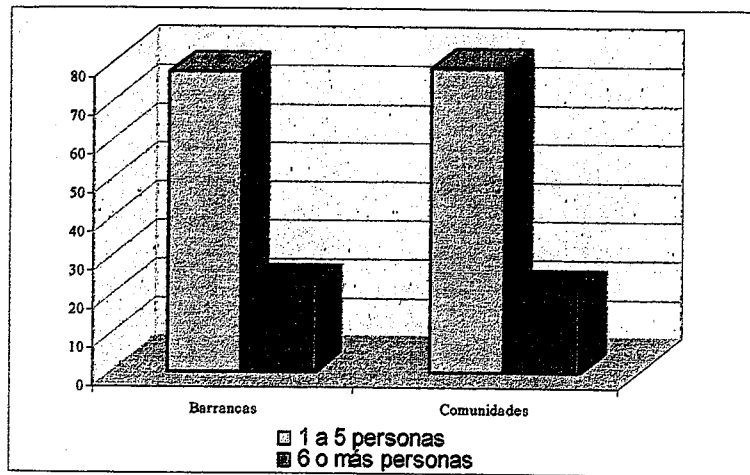
It should be emphasized that the majority of the rural communities, with the exception of Mariche, Saladero and Muro de Gualguapo, have teaching facilities, Chart N° 4.21 shows the education levels offered by the communities.

Chart N° 4.21
Existence of Teaching facilities

Community	Teaching facilities		
	Pre-school	Elementary schools	High schools
Barrancas	x	x	x
Apostadero	x	x	
Barrancos de Barrancas		x	
Saladero			
Muro de Gualguapo			
Isla de Varadero	x	x	
Isla Chivera	x	x	
Mariche			
Riberas del caño Tórtola	x	x	
Isla Tórtola (inner part)			

Source: Own Calculations

Graphic N° 4.23
HOMES ACCORDING TO THE NUMBER OF DEPENDENTS



Graphic N° 4.24
HOMES ACCORDING TO THEIR OVERCROWDED STATUS

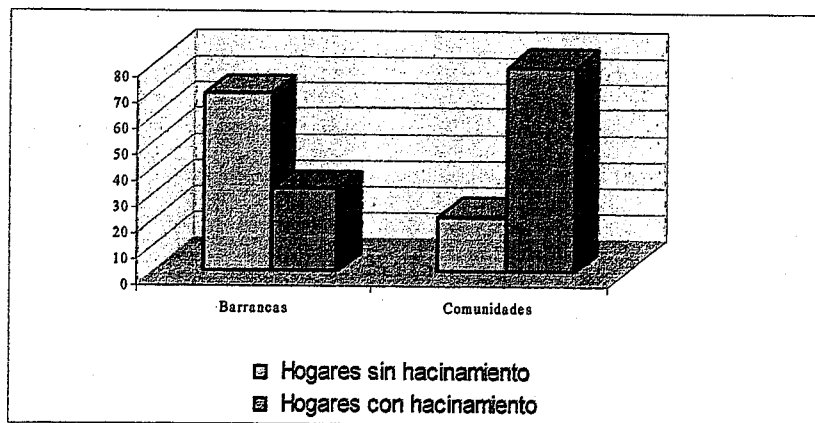


Chart N° 4.22
Existing Infrastructure

Service	Communities									
	Barrancas	Apostadero	Barrancos de Barrancas	Saladero	Muro de Guarguapo	Isla Varadero	Isla Chivera	Mariche	Riberas de Caño tórtola	Isla Tórtola (Inner part)
Social service										
Cultural spaces	x									
Recreational parks	x									
Police stations	x	x	x			x	x			
Churches, chapels	x	x				x			x	
Hospitales	x									
Public health, dispensaries	x	x				x	x		x	
Private Clinics	x									
Multiple homes	x	x				x			x	
Commercial services										
Industries, factories	x									
Markets	x	x								
Wharfs	x									
Shops	x		x			x				

Source: Own Calculations

As it can be seen in Chart N° 4.22, only Barrancas has access to almost all the infrastructure that could be expected from a fairly architecturally planned community. Concerning rural communities, it can be observed that in total, 33% has police service, either because there is a police department or because the community has at least one police inspector. On the other hand, 44% of the communities have churches or at least chapels, belonging mostly to the Catholic and Evangelic religions. Likewise, 44% of the communities have public clinics or ambulatory centers. It should be underlined that in the case of communities located at the bank of Tórtola caño, there was an ambulatory center that was destroyed after a river flood. In 33% of the communities the existence of multiple-homes operating normally can be observed. Currently these multiple-homes are not operating, since their situation depends on the direction to be followed by the social policy of the country. To a lower proportion, 22% of the communities have shopping facilities, but most of the products come from Barrancas. The existence of commercial facilities, such as shops, wharfs or industries, was only observed in Barrancas.

Pertaining transportation and access roads to these communities, it should be emphasized that only Barrancas, Apostadero and Barrancos de Barrancas have motor vehicles for transportation, and it is precisely at those communities, besides Saladero, where ground transportation is possible (Charts N° 4.23 and 4.24). The remaining communities only use curiaras or personal boats, or barges, for transportation to have access to their communities, obviously, the only access to them is through the river.

Chart N° 4.23

Transportation Means to have access to the communities

Comunities	Vehicle	Boat or curiara	Barge
Barrancas	x	x	
Apostadero	x	x	
Barrancos de Barrancas	x	x	
Saladero		x	
Muro de Guarguapo		x	
Isla de Varadero		x	
Isla Chivera		x	
Mariche		x	x
Banks of Tórtola caño		x	
Inner Tórtola Island		x	

Source: Own Calculations

Chart N° 4.24

Access roads to the communities

Comunities	Access to communities	
	Fluvial	Ground
Barrancas	x	x
Apostadero	x	x
Barrancos de Barrancas	x	x
Saladero	x	x
Muro de Gualguapo	x	
Isla de Varadero	x	
Isla Chivera	x	
Mariche	x	
Banks of Tórtola caño	x	
Inner Tórtola Island	x	

Source: Own Calculations

Summarizing what has been stated in this section, the most relevant socioeconomic traces in the area of study are:

- Very young population (under 30 years of age) where there is approximately the same number of men and women, with a small group of immigrant population coming from British Guyana which has managed to become inserted into the socioeconomic dynamic of the zone, and with an indigenous settlement in Barrancas in serious state of insalubrity and totally excluded from the dynamic of the area.
- Low level of instruction, in most cases it only covers basic education, and with a high propensity to school abandonment.
- In the case of Barrancas the economy turns around the agricultural and live stock activities, and the public sector. In the case of the remaining communities, there is a clear agricultural and fishing orientation. In both cases, and to a higher degree in the remaining communities, the dependency of the economic activity on the river is very important.
- The masculine population works mainly in agriculture and fishing, and the feminine population is mainly dedicated to housework, or works in shops and offices.
- There are few possibilities of health care, since although there is a hospital in Barrancas and public clinics in some rural communities, the care paid is only of primary assistance and only in non serious cases, which means that the inhabitants have to go to nearby cities where the quality of service is better, or they have to postpone the problems, a fact that joined to other factors generates a general state of deterioration of the persons evidenced by premature aging.
- There is a high definition toward the catholic religion, although there is a significant group of evangelical, and in the case of the rural communities, a strange case of atheism.
- In Barrancas there is a predominance of the consolidated owned home and with access to basic services, but at the rural communities most of them are of very precarious and unstable structure, and have no access to basic services, although it can be observed in them a minimum of services such as teaching centers and also primary health care centers.

- There is an average of 6 members per each home, and where the member or members that work have to share their income with at least 5 persons, the per capita income estimate is quite low.
- There is an alarming index of crowding in the rural communities that can be a focus for the generation of multiple social problems.
- The socioeconomic dynamic turns around the river, mainly at the rural communities, where the river is the only communication mean among them and the remaining nearby populated centers.

4.4.6. Relationships between the communities in the area of influence of the Project and use of the river

An aspect that deserves special importance in its characterization is the use of the river as a communication mean, since this will give a clear vision of the potential incidence of the work, as a barrier, for the socioeconomic environment.

There are several axis of relationships between the communities of influence of the Project, in which the river is the mean through which they maintain contact for the development of their daily activities.

Thus it can be identified, in a first term, as the relationships that take place for marketing, either of product deriving from fishing or agriculture, or the purchase of products for self-consumption. Charts N° 4.25 and 4.26 show, for each one of the areas, the places most commonly used as purchase and sale points. That is, from the surveyed population, those located to the left were the most mentioned places, concentrating each one a percentage, according to the specific community.

Chart N° 4.25
Main sale points of the fishing and agricultural products

Place of sale	Place of residence		
	Barrancas	Northern communities	Southern communities
Total	100	100	100
Barrancas	86	100	63
Piacoa	-	-	29
Maturín	7	-	-
San Félix	7	-	4
Northern communities	-	-	4

Source: Own Calculations

Chart N° 4.26
Main places for the purchase of consumption products

Place of purchase	Place of residence		
	Barrancas	Northern Communities	Southern Communities
Total	100	100	100
Barrancas	86	79	55
Piacoa	-	8	29
Northern Communities	-	13	4
San Félix	9	-	4
Tucupita	1	-	4
Southern communities	-	-	4
Maturín	4	-	-
Others	1	-	-

Source: Own Calculations

Barrancas, is a relatively autonomous community in which products from the river are sold, and develops occasional contacts with important nearby cities such as Maturín and San Felix. Likewise, it is possible to find the products that are needed for consumption and that do not come from the river.

For the communities of the North (Saladero, Apostadero, Barrancos de Barrancas, etc.) Barrancas it is the main sales point, as well as the first direct supply center for people. This is because the population goes to Barrancas and buy their products there. The presence of small grocery shops at the communities, facilitates that the purchase of daily used products be made within the communities, this is why this option has been quoted 13% of the times.

The Southern communities maintain a close relationship with Barrancas and Piacoa. Although Barrancas is the main center of the zone, due to its closeness to Piacoa, the people from the banks of Tórtola caño establish a continuous contact with the latter, that is reflected on the trade relationships for which the river is the main communication mean.

Concerning the areas of the zones where fishing and crops are developed, we have that in the homes of Barrancas dedicated to these activities, 44%, there are some areas of the Lower Delta, and 22% is assigned to Grye River as the places of usual fishing. With respect to crops, it is not possible to identify accurate areas, probably this is due to the fact that they are small cultivation areas close to the homes, and they were defined in the category of "others" .

The Northern communities, 88%, are considered the usual fishing place of the Tórtola caño banks and in what concerns the cultivation areas, the figure is 31% at the Lower Delta and 19% at the internal lagoons, close to Barrancas and Grye River.

Finally, the Southern communities quote 50% in Varadero Island as a cultivation place, and 25% in other areas (which could be, among others, small land plots in the houses for family consumption). Concerning fishing, Tórtola is quoted as 47%, the internal lagoons of Tórtola Island 35%, and 24% the Lower Delta.

In what concerns educational and health services, a great dependency of the communities on Barrancas is perceived, which suggests the continuous communication and mobility of the community inhabitants. (Charts N° 4.27and 4.28)

Chart N° 4.27
Main areas of displacement to get education

Place of study	Place of residence		
	Barrancas	Northern Communities	Southern Communities
Total	100	100	100
Barrancas	90	44	10
Piacoa	-	-	15
Northern Communities	-	56	-
San Félix	4	-	5
Tucupita	4	-	15
Southern Communities	-	-	50
Maturín	1	-	-
Other	1	-	5

Source: Own Calculations

Cuadro N° 4.28
Principales puntos de asistencia médica

Place of Assistance	Place of Residence		
	Barrancas	Northern Communities	Southern Communities
Total	100	100	100
Barrancas	61	69	54
Tucupita	13	3	23
San Félix	12	6	15
Maturín	14	3	-
Northern communities	-	-	-
Piacoa	-	19	8

Source: Own Calculations

As it can be seen in the above mentioned charts, although the Northern communities have educational facilities, and 56% of the students attend school at their own community, 44% of the times Barrancas is named as the study center. In what concerns medical care, these communities have a clear dependence on Barrancas or Piacoa, mainly.

Concerning educational services, 50% of the inhabitants of the Southern communities get their education outside their own community, being Piacoa and Tucupita the main places where they go. And with respect to medical care, Barrancas, Tucupita and San Felix are the main centers where the population go, not having in their own community any type of public clinic.

Finally, Barrancas is the destination of most students of the area (90%), but this is not the same situation in what medical care is concerned. In this area, the population goes to Tucupita, Maturín or San Félix when there are delicate cases that need a more specialized treatment, since although the area has a health center, it does not have the necessary resources to offer a good service.