NOAA INSTITUTIONAL REPOSITORY

ACADEMIC PUBLICATION

RESEARCH ARTICLE

Comores : Evaluation socio-economique et gestion communautaire des recifs

AUTHORS

C. N. S. (Chris N. S.) Poonian

Eileen. Alicea

ILMIN LIBRARY • ACADEMIC FREE ACCESS

https://ilminlibrary.com

Coral Reef Conservation Program NA07NOS4630034

SOCIO-ECONOMIC ASSESSMENT AND IDENTIFICATION OF POTENTIAL SITES FOR COMMUNITY-BASED CORAL REEF MANAGEMENT IN THE COMOROS



Community Centred Conservation
C3-Comores
2010

© C3 Madagascar and Indian Ocean Islands Programme 2010

C3 Madagascar and Indian Ocean Islands Programme is a collaborative initiative between Community Centred Conservation (C3), a non-profit company registered in England no. 5606924 and local partner organizations.

The study described in this report was funded by the NOAA Coral Reef Conservation Program.

Suggested citation:

C3 Madagascar and Indian Ocean Islands Programme (2010) SOCIO-ECONOMIC ASSESSMENT AND IDENTIFICATION OF POTENTIAL SITES FOR COMMUNITY-BASED CORAL REEF MANAGEMENT IN THE COMOROS. A Report Submitted to the NOAA Coral Reef Conservation Program, USA 22pp

FOR MORE INFORMATION

C3 Madagascar and Indian Ocean Islands Programme (Comoros) **BP8310 Moroni** **Iconi** **Union of Comoros** **T. +269 773 75 04**	**NOAA Coral Reef Conservation Program** **Office of Response and Restoration** **NOAA National Ocean Service** **1305 East-West Highway** **Silver Spring, MD 20910** **USA**
Community Centred Conservation (C3) **www.c-3.org.uk** **info@c-3.org.uk**	**CORDIO East Africa** **#9 Kibaki Flats, Kenyatta Beach,** **Bamburi Beach** **PO BOX 10135 Mombasa 80101, Kenya** **socmon@cordioea.org**

Cover photo: Lobster fishers in northern Grande Comore

SOCIO-ECONOMIC ASSESSMENT AND IDENTIFICATION OF POTENTIAL SITES FOR COMMUNITY-BASED CORAL REEF MANAGEMENT IN THE COMOROS

Edited by Chris Poonian

Community Centred Conservation (C3)

Moroni 2010

ACKNOWLEDGEMENTS

This report is the culmination of the advice, cooperation, hard work and expertise of many people. In particular, acknowledgments are due to the following for their contributions:

COMMUNITY CENTRED CONSERVATION (C3)
Patricia ZR Davis, Director
Chris Poonian, International Programme Manager
Maoulida Kamal, Programme Officer
David Hunter, Programme Officer
Daniella Blake, Programme Coordinator
Al'yas'aa Ben Ahmed, Programme Assistant

CORDIO EAST AFRICA
Innocent Wanyonyi
Delphine Malleret-King
Victor Mwakha

THE COMOROS SOCMON TEAM
University of The Comoros
HTC Anjouan
Action Comores
***Hoani Uni Pour La Proteccion De L'environnement* (HUPPE)**
The Junior Ecoguards Of Niomachoua

MINISTRY FOR THE ENVIRONMENT, UNION OF THE COMOROS
Particularly Farid Anasse (INRAPE)

All other interns and students who assisted with data collection

Everybody at the study sites that gave their valuable time and information, particularly Key Informants

SUMMARY OF ACHIEVEMENTS

Objective 1. To identify at least 20 potential villages at three sites (Grande Comore, Mohéli and Anjouan) for socio-economic assessments and monitoring programs and conduct assessments and monitoring at these villages.

Through evaluation of secondary data, five villages were selected at each site, a total of 15 villages. Following consultation with CORDIO-EA, it was deemed a better strategy to collect more data from fewer villages to maximize data quality and the validity of management recommendations that could be drawn.

We aimed for a sample size of 60 household surveys per village and ultimately conducted 825 household surveys and 90 Key Informant interviews. Data collection was slowed by serious military unrest in Anjouan during early 2008 which led to the granting of a one-year extension. Surveys in Nioumachoua, Moheli, were also delayed until January 2010 because of a change in management of Moheli Marine Park.

Surveys were conducted with the implicit assistance of local partners including non-governmental organizations, villages associations and youth groups; University of the Comoros, *Action Comores*, HTC Anjouan, *Hoani Uni Pour la Proteccion de l'Environnement* (HUPPE) and Junior Ecoguards.

Objective 2. To train students and participants from local partner organizations in *SocMon* techniques to ensure sustainability

A training workshop was conducted in collaboration with CORDIO-EA in June 2008 and all enumerators were given thorough refresher training before conducting fieldwork. Maoulida Kamal and Al yas aa Ben Ahmed were involved in managing and training enumerators on all islands and are now able to act as SocMon trainers

for the Comoros. Mouzidalifa Youssouf Bounou is also an experienced SocMon enumerator and is able to manage the SocMon team for Moheli.

Objective 3. To initiate plans for a network of community-managed coral reef protected areas for the Comoros.

Although the project period coincided with a time of serious political upheaval and unrest in the Comoros, we have been able to involve government partners throughout, providing them with regular project updates. The recent formation of a National Coastal Zone Management Committee has been particularly timely and talks are underway to ensure the inclusion of SocMon findings in the upcoming Coastal Zone Management Plan. From this work, we have identified priority sites to focus future work including Mitsamiouli on Grande Comore, Hoani on Moheli and Bimbini on Anjouan. SocMon surveys are planned for Hoani in 2011 so this site, an important nesting ground for green turtles can be monitored long-term. We are currently seeking funding to continue SocMon monitoring at Mitsamiouli and Bimbini. Results of the survey were fedback to the communities involved, and were positively received.

Objective 4. To contribute to the ReefBase Global Socio-economic database

All quantitative data collected during this project have been entered into the standard format as advised by CORDIO-EA and are attached to this report. Any further data required are available from C3.

CONTENTS

1 INTRODUCTION 1
1.1 Site description 1
1.2 Purpose of SocMon activities 4
1.3 Monitoring framework 4
2 METHODS 5
2.1 Survey design and considerations 5
2.2 SocMon team 7
2.3 Field data collection 7
2.4 Data entry and processing 8
3 RESULTS 9
3.1 Demographics 9
3.2 Coastal and marine activities 10
3.3 Attitudes and perceptions 14
3.4 Socioeconomic status 17
4 CONCLUSION / RECOMMENDATIONS 18
5 LESSONS LEARNT FROM THE PROCESS 19
5.1 Time and interviewee constraints 19
5.2 Survey fatigue 19
5.3 Data accuracy 19
5.4 Interview interference 20
6 COMMUNICATION STRATEGY 20
7 REFERENCES 21
APPENDICES
I Survey instruments
II Basic statistics for all survey questions
III SocMon project costs
IV SocMon team
V SocMon variables selected
VI Presentations at international conferences
VII SocMon WIO Training Report, Moroni, ComorosSocMon village
VIII feedback materials

1 INTRODUCTION

1.1 Site description

The Union of the Comoros (Figure 1), three volcanic islands: Grande Comore (Ngazidja), Anjouan (Ndzuani) and Mohéli (Mwali), is situated in the Mozambique Channel between Mozambique and Madagascar (a fourth island, Mayotte, remains under French administration). Since independence from France in 1975, the Union of the Comoros has not achieved firm political stability. The current governmental system, established in 2002, consists of an autonomous government for each island (dealing with internal island affairs), and a Union Government for the country as a whole (dealing with national and international affairs).

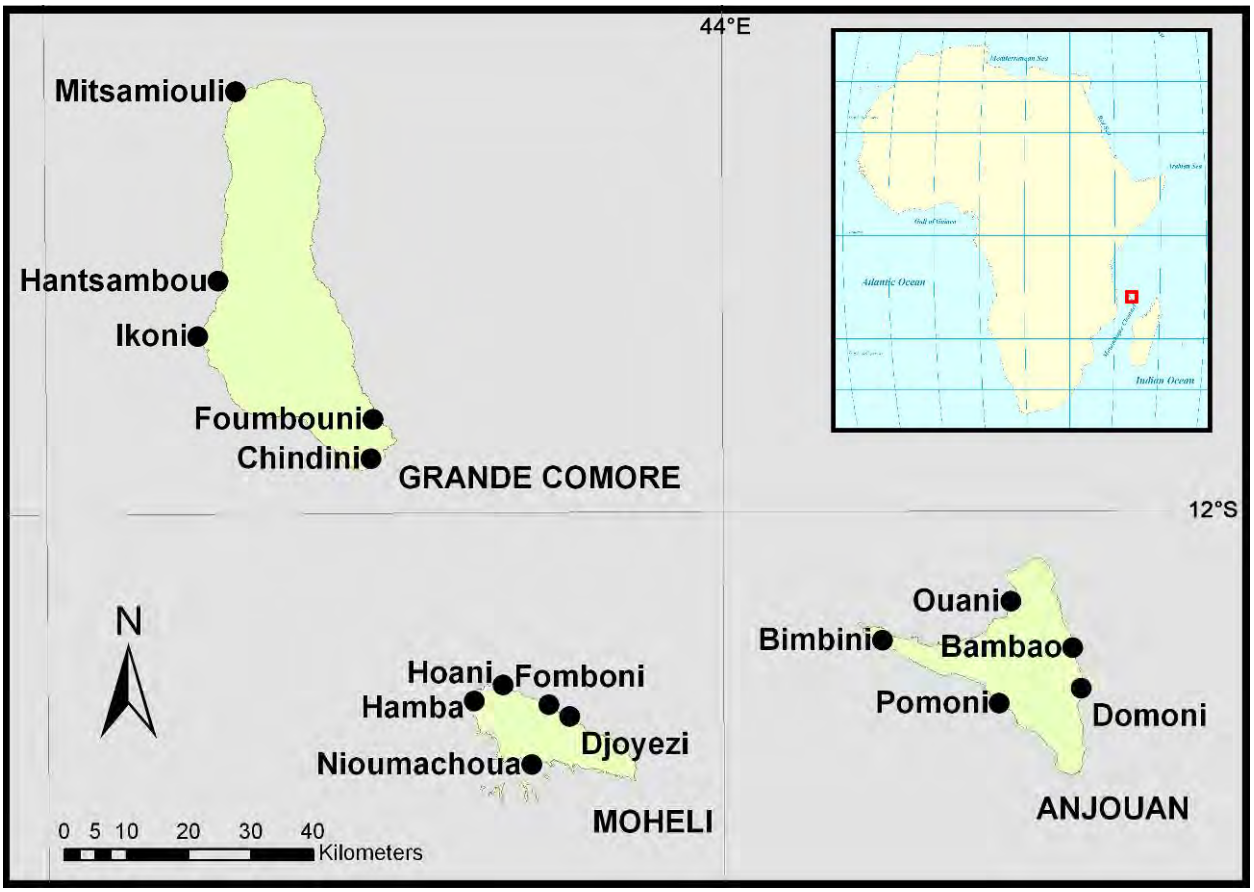


Figure 1. Union of the Comoros, showing SocMon sites and villages

Grande Comore is the largest of the islands with a surface area of 1148 km^2 and estimated population of 293,160 (Battistini and Verin 1984). The island is heavily cultivated with the majority of remaining pristine forest located on the steep inaccessible slopes of Mount Karthala. Anjouan has a surface area of 424 km^2 (UNEP 2002) and an estimated population of 253,950; this high population density has resulted in severe pressure on natural habitats and resources. Mohéli is the smallest of the three islands with a surface area of 290 km^2 and a population of 35,751 (Union des Comores 2005a). The average population density is 269 inhabitants per square kilometer, particularly concentrated in coastal areas (Abdoulhalik 1998; Cincotta et al 2000; UNDP 2009). The Union of the Comoros is among the world's poorest and least developed nations. The Human Development Index (HDI) is estimated at 0.576 (in 2007) (138th out of 182 countries ranked) (UNDP 2009; World Bank 2009). As an island state, with limited natural resources, these demographic pressures are likely to result in continued serious environmental degradation unless mitigation measures and proactive management of natural resources are initiated. These impacts are most likely to be experienced first in coastal populations, since most of the population lives on the coast and artisanal fisheries are of considerable economic importance (Abdoulhalik 1998).



Bonito at Fomboni market, Mohéli

In contrast to its demographic circumstances, the Union of the Comoros has been identified as one of the 'hottest hotspots' in terms of global conservation priorities (Myers et al 2000). Thus, this small island developing state is one of the world's critical sites for natural resource-based development and has enormous potential, not only for ecotourism, but for conservation investment and action. These combined attributes of high coastal and marine diversity and intensive anthropogenic pressure underscore the importance of assessing, understanding and monitoring socioeconomic elements to strengthen current and implement further appropriate management and conservation strategies which include local stakeholders and communities.



Juvenile endangered green sea turtle at Hoani, Mohéli

The three main obstacles to the country in the implementation of effective biodiversity conservation strategies have been identified as: lack of technical and financial resources; demographic pressure and an absence of fair distribution of the benefits arising from natural resources (Union des Comores 2003). In 1998, IUCN and the Comorian government, funded by GEF/UNDP, initiated a 5-year project entitled 'Conservation of Biodiversity and Sustainable Development in the Federal Islamic Republic of the Comoros' (Project Biodiversity). Although successful to some

extent, this project was overambitious for the available levels of training, project timeframe and existing infrastructure (Wells 2005) and the final evaluation of the project concluded that the prognosis for its sustainability was poor (IUCN 2004). Although some components of Project Biodiversity were extended for two years as 'The Project for Rehabilitation Activities for the Conservation of Biodiversity', all funded activities concluded in 2005.

1.2 Purpose of SocMon activities

The human dimension of coral reef management in the Comoros has not been fully considered to date and socioeconomic surveys could provide data essential for the development of further coastal management initiatives. Prliminaryl socio-economic surveys have been carried out on Grande Comore by a local non-governmental organization, Association of Intervention for Development and the Environment (AIDE), and on Mohéli by C3, but no long-term monitoring programs have been implemented. To address these issues, this work aimed to carry out a comprehensive socioeconomic survey of all three islands of the Union of the Comoros: Grande Comore, Mohéli and Anjouan, based on SocMon survey protocols to elucidate options for community-based coastal resource management.

1.3 Monitoring framework

Five coastal villages were selected for SocMon surveys on each island (Figure 1). Study sites were selected based on several criteria including dependence on marine resources, presence of important species or habitat and logistical considerations. Villages varied in population, geographical location and socioeconomic development and status. C3's amassed experience of working in the country over the last 4 years, analysis of secondary data and communication with local partners guided the final selection of study sites.

2 METHODS

2.1 Survey design and considerations

The SocMon variables chosen and the research approach for each are provided in Appendix V. Although SocMon methodology was followed closely throughout the survey design process, necessary adaptations were made to make questionnaires Comoros-specific. Before carrying out surveys in each village, a courtesy meeting with the village mayor was arranged. This gave the team the opportunity to explain their presence in the village, the purpose of the project and how the surveys would be carried out.

Household surveys

Households were defined as people from the same family living together and sharing meals. Household surveys focused on household demographics (SocMon variables S1-10), coastal and marine activities (S12-S16), attitudes and perceptions (S19-28) and socioeconomic status (S29).

Households to be sampled were determined using a semi-random sampling method. Each village was divided into areas of roughly even size with each area being allocated to a sampling team. Sampling teams started at the centre of their assigned area, a pen was placed on the ground and spun, after which the team walked in the chosen direction for a period of two minutes. The house that was closest after two minutes was chosen for surveying. The head of the household was interviewed by preference; if s/he was not present then another adult member of the household was interviewed. The team aimed to survey around 60 households per village, as this was a realistic number to achieve in the time available, and provided a sufficient sample population for analysis. However the small size of certain villages (e.g. Hantsambou) meant it was not always possible to achieve this sample size.

Key informant interviews

Two Key Informant (KI) surveys were developed: one for chiefs (*notables*) and town officials and one for fishers. Both groups of KIs provided valuable qualitative information on stakeholder roles and responsibilities (SocMon variables K2-3). The notable/town official interview included village boundaries (K1), community demographics (K4-14), health (K15), infrastructure and business (K16-17) and coastal and marine activities (excluding fishing) (K18-26). Interviews with fisher KIs provided detailed information on fishing activities carried out by the community (K18-26).



Key Informant interview in Hoani, Mohéli

Key informants were selected using snowball sampling. A known informant (such as the village mayor or fishing elder) was asked to give the names of other stakeholders in the same stakeholder group. New KIs were then asked for other stakeholders within the group until it was decided that a sufficient sample size had been covered. A sample size was deemed sufficient when answers became repeated and no new information was being given by successive KIs.

Feedback sessions

Feedback sessions were held in early 2010 at all villages. Preliminary results (Appendix VIII) of the baseline surveys were presented to a group of representatives from as many stakeholder groups as possible. Participants were encouraged to comment on the validity of the results and their implications. Laminated copies of all the information presented were distributed to the wider community.

2.2 SocMon team

The research team (Appendix IV) consisted of C3 staff, staff from local partner organizations international students. Enumerators were selected from contacts made at the SocMon training workshop, or were recommended at a later date. Enumerators were all fluent in Comorian and French. They were generally familiar with the communities they were working in, which assisted greatly in finding Key Informants.

In addition to the training workshop organized in partnership with CORDIO-EA (Appendix VII), several training days were arranged on each island before starting surveys. This ensured that the survey team was completely familiar with the sampling process and the survey forms in order to promote consistency in their delivery. The need for good training cannot be overemphasized; a lack of training will lead to poor survey quality and ultimately delay the whole field work process.

2.3 Field data collection

Household surveys and key informant interviews were carried out between January and June 2009 (Further surveys in Nioumachoua, Mohéli were conducted after the main fieldwork phase in March 2010) (Table 1). Surveys were carried out in Comorian or French, depending on the preference of the interviewee, and answers were written in French. All household surveys were conducted by teams of two

individuals: an enumerator and a C3 staff member or international student. The presence of the C3 representative provided a secondary screening process to ensure quality of data collection. A typical household survey took approximately half an hour to complete. Key informant surveys were led by a C3 staff member, often with the aid of a local enumerator to assist in finding informants.

Table 1: Number of surveys and interviews conducted in each village and at each site

Site / Village	Households surveyed	Fisher KI interviews	Notable / town official KI interviews
Chindini	59	6	5
Foumbouni	60	4	1
Hantsambou	40	3	3
Ikoni	56	4	2
Mitsamiouli	54	3	4
GRANDE COMORE	**269**	**20**	**15**
Bambao	61	3	3
Bimbini	55	2	3
Domoni	59	3	3
Ouani	60	3	3
Pomoni	59	3	2
ANJOUAN	**294**	**14**	**14**
Djoiezi	59	3	3
Fomboni	60	5	4
Hamba	45	3	3
Hoani	60	2	3
Nioumachoua	38	0	1
MOHÉLI	**262**	**13**	**14**
COMOROS	**825**	**47**	**43**

2.4 Data entry and processing

Responses were translated into English and entered into a custom Microsoft Access database. Members of the original survey team were consulted to ensure original meaning of responses was preserved on translation. Responses to open ended questions were fitted into a range of broad categories in order to analyze emergent patterns and trends. Original answers were preserved for qualitative analysis.

3 RESULTS

Basic statistics for all household survey questions are given in Appendix II. The following section summarizes some main findings. Key Informant interviews and feedback sessions were used to validate the household survey data.

3.1 Demographics

The most commonly-reported primary occupation in the Comoros was 'student' (22%), followed by 'housework' (17%) and 'unemployed' (14%) and 72% had no secondary occupation. Thus few people in the Comoros have a salaried occupation. There was little difference between the three islands. On all islands, the most common age-class was 0-10 years old (20% (Grande Comore) to 30% (Mohéli). Overall, exactly half of the population sampled was 20 or younger. Sex ratios varied between islands, with the highest proportion of women on Grande Comore (54%), followed by Anjouan (51%) and Mohéli was found to have more men (51%) than women. High proportions of the population were found to have never gone to school (Grande Comore 34%, Anjouan 40% and Mohéli 27%). The most common primary sources of income are given in Table 2.

Table 2. Three most common primary sources of income for households in the Comoros

Site	1	2	3
GRANDE COMORE	• Fishing (24%)	• Small scale retail (23%)	• Services* (15%) • Diaspora (15%)
ANJOUAN	• Cultivation (25%)	• Fishing (15%) • Public sector	• Services* (14%)
MOHÉLI	• Small-sale retail (19%)	• Cultivation (17%) • Services* • Public sector	• Fishing (8%)
COMOROS	• Small scale retail (17%)	• Cultivation (16%) • Fishing	• Services* (15%)

*skilled / manual

3.2 Coastal and marine activities

All islands of the Comoros showed a strong dependence on marine resources, particularly from fisheries on Grande Comore. On Anjouan and Mohéli, extraction of sand, gravel, rocks and coral was widespread, particularly in villages on the north coast of Mohéli (Djoyezi, Hamba and Hoani) and at Pomoni in Anjouan. Tourism was a less frequent activity and only occurred on Mohéli and Grande Comore. Grande Comore was the only site where maritime transport was an important activity. All villages used the sea for bathing, with the exception of Hamba (Mohéli), perhaps due to its location at the top of a steep hill, a fair walk from the beach.



Bringing in the catch

Fisheries

Fish species caught varied between islands (Figure 2). On Grande Comore, fishers caught mainly pelagic species such as Scombridae and Istiophoridae. Scombridae was also the most popular catch on Anjouan although here fisheries were more diverse and included a number of reef species. On Mohéli, reef fisheries were more common, with less fishers catching pelagics. Serranidae was the most common reef fish family caught on all islands.

The vast majority of fishers used hand lines on all islands. However, significant net fisheries also occurred on Mohéli and Anjouan, and were often restricted to particular villages such as Bimbini (Anjouan) and Hamba (Mohéli).



Net fisher on Mohéli

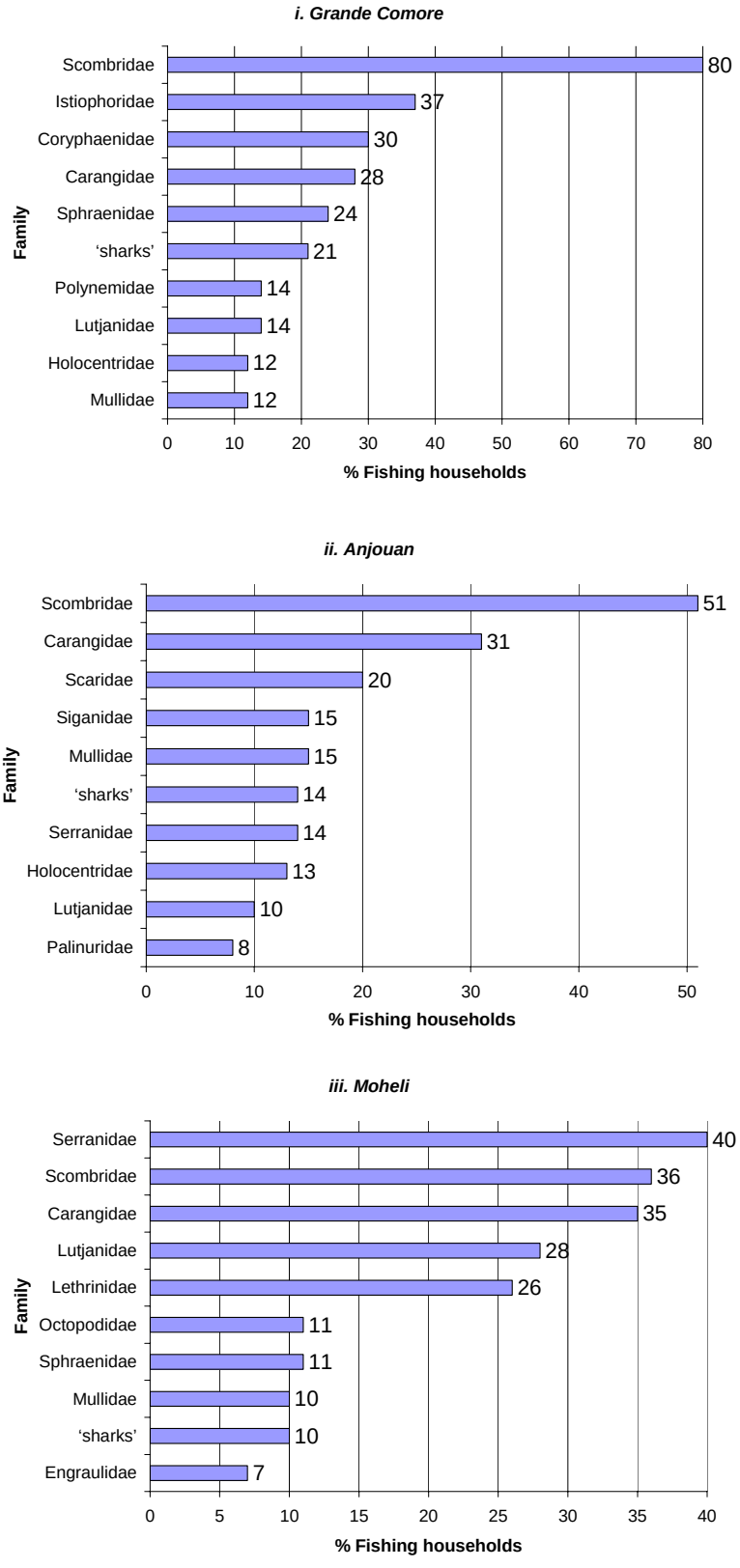


Figure 2. Percentage of fishing households catching each fish family for each island

Extraction of building materials

Sand was the most commonly-extracted building material on all islands, but significant amounts of coral were also extracted on Grande Comore, and gravel on Mohéli.



Sand extraction on Anjouan

3.3 Attitudes and perceptions

At all sites, households believed that coral reefs, mangroves, seagrass and seawater were in 'good' condition. On Grande Comore, households believed that freshwater was 'good', but on Mohéli and Anjouan, 'bad' was the most frequent response. On Grande Comore and Mohéli, mountain forests were generally regarded as in 'good' condition, but on Anjouan, they were thought to be in a 'bad' state. Beaches were generally regarded as being in a 'good' state on Grande Comore and Mohéli, but on Anjouan, 'bad' was the most frequent response. The mangroves and seagrass at Bimbini were particularly recognized as being in 'excellent' or 'good' condition.

Littering was perceived as the most significant threat on Grande Comore and Mohéli and second most important after sand extraction on Anjouan. Sand and coral extraction were recognized as major threats on all islands. The use of poison was an often-mentioned threat on Anjouan and Mohéli. Other destructive fishing methods, such as the use of gillnets were also regularly pointed out. Other threats included sea turtle poaching, coral destruction, erosion, pollution and harvesting undersized fish.



Litter at Bimbini

Just over half of the households surveyed on Grande Comore were aware of rules governing fishing, but most households on Mohéli and Anjouan were unaware of any rules. Almost half of the households on Mohéli knew of rules governing the sale of fish, but most households on Grande Comore and Anjouan were unaware of such rules. Just over half of households on Grande Comore were of rules governing coastal construction, as were most households on Anjouan; households on Mohéli were generally unaware of such rules. Households at all sites were generally divided on the existence of regulations for sand and coral extraction and were generally unaware of rules governing mangrove deforestation, maritime transport and littering. There was a strong awareness of rules against deforestation on Mohéli, but less in Anjouan, and most households on Grande Comore believed that deforestation was unregulated. Households on Mohéli and Anjouan were aware of rules against turtle poaching, but there was less awareness on Grande Comore.



Turtle poaching in Bambao, Anjouan

Most households believed that there was high compliance with fishing regulations, particularly on Grande Comore. Respect for rules governing the sale of fish was more widespread on Grande Comore than on Anjouan or Mohéli. Most households reported high compliance with construction regulations, particularly on Grande Comore. There was perceived to be high compliance with coral extraction, mangrove deforestation, turtle poaching and maritime transport regulations on all islands however, compliance with sand extraction regulations was much lower on Mohéli, and especially low on Anjouan. There was high compliance with deforestation regulations on Grande Comore and Mohéli, but compliance was much lower on Anjouan. Households on Grande Comore generally believed that there was high compliance with regulations governing litter, but compliance was regarded as much lower on Anjouan and Mohéli.

Unemployment was regarded as the biggest problem facing coastal communities in the Comoros, particularly on Anjouan; households on Grande Comore and Mohéli cited infrastructural issues as the biggest problem. Lack of electricity and water supplies were regarded as a major problem on all islands as did poverty and related implications for health and education. Political issues were also mentioned by households from all islands as was the natural problem of flooding from both sea and rivers on Anjouan and Mohéli.

Successes in coastal management were widely attributed to effective enforcement, community involvement and levels of awareness. The question about failures in marine resource management was widely misunderstood by respondents, likely due to a lack of knowledge of current management procedures. In general, households on all islands had a strong appreciation of non-market and non-use values of coastal resources.

3.4 Socioeconomic status

Houses on Grande Comore were generally constructed of more modern materials than those on Mohéli or Anjouan. However, the mains water supply on Grande Comore was less reliable than that on the other islands and half of the households surveyed had to rely on public cisterns. Hamba and Hoani on Mohéli were the only villages surveyed that did not have access to mains electricity.



Examples of houses in the Comoros

4 CONCLUSION / RECOMMENDATIONS

The SocMon surveys provided information essential to fully understand the current status of marine resource management in the Comoros. It would be extremely valuable to continue SocMon surveys, ideally every two years. In order to avoid logistical complications, we propose that one village on each island should be targeted for long-term monitoring. Based on the presence of marine resources, local interest in coastal resource management and the home villages of the SocMon team, we propose Mitsamouli on Grande Comore, Bimbini on Anjouan and Hoani on Mohéli. This targeted monitoring programmed would be feasible with only minimal external funding and thus has good potential for long-term sustainability.

In these baseline surveys, the KI interviews were not used to their full potential. Although they were valuable in validating the household surveys. In the future, it would be useful to focus the KI work on governance variables (K28-37), information on which is lacking from the baseline surveys. However, it was generally very difficult to gather any governance information because of a lack of widespread knowledge of past and current coastal management measures, and the informal nature of those that did exist.

5 LESSONS LEARNT FROM THE PROCESS

5.1 Time and interviewee constraints

The surveys were all carried out between 0900hrs and 1700hrs because of travel and time constraints. This meant that it was often difficult to survey the head of the household, as they are usually the major breadwinner and out at work during the day. In the Comoros, traditional gender roles are the norm, and in the majority of households, women do not go out to work. For this reason it was more difficult to interview men than women during the day, leading to the majority of respondents in this study being female. It is likely that there are differences in knowledge specific to the genders, and this is likely to have had an effect on responses to survey questions.

5.2 Survey fatigue

Survey fatigue was an issue in this work. In many villages surveys had been carried out by other organizations and villagers complained that foreigners kept coming to the village to ask questions but nothing ever changed as a result. When the survey team was met by this reluctance to take part, they made sure to explain clearly the purposes of the study and what would happen with the results, whilst being careful not to make any promises of significant or immediate solutions to the village's problems as a result of the study. A key issue that came from these discussions is that villagers feel they give their time answering lots of questions and yet don't hear anything about the results. The SocMon feedback sessions were a valuable tool in minimizing these bad feelings towards researchers.

5.3 Data accuracy

The Comorian language contains limited vocabulary relating to environmental terminology, making it difficult to ensure precision is maintained when translating questions from French into Comorian, and then responses back into French. In this

study this occasionally led to responses which did not answer the question posed and had to be discarded as irrelevant to maintain accuracy of the dataset. Fish names also caused particular problem, with numerous local names for the same species and single local names for multiple species.

5.4 Interview interference

The household survey was designed to gather responses from a sole household member, preferably the head of the household, in order to give the interviewee more freedom to talk about the subject and to give honest answers. However on conducting the surveys, there were often other family members or friends present and wanting to make their opinions heard. In these cases the interviewers did their best to record just the interviewers' answers; however the influence of the others present on the respondent has to be acknowledged.

6 COMMUNICATION STRATEGY

The results of this work have already been communicated to the communities involved, and were enthusiastically received and highly appreciated. The management implications of this work will be communicated to the Comorian government in meetings and through a technical report. We also aim to produce at least one peer-reviewed scientific paper and to give several conference presentations. All of these publications will be shared with CORDIO-EA and Reef Base.

7 REFERENCES

Abdoulhalik FM (1998) MARINE SCIENCE COUNTRY PROFILES COMORES. Intergovernmental Oceanographic Commission, Western Indian Ocean Marine Science Association. 35pp

Battistini R, Verin P (1984) GEOGRAPHIE DES COMORES, Agence de cooperation culturelle et technique

Cincotta RP, Wisnewski J, Engelman R (2000) HUMAN POPULATION IN THE BIODIVERSITY HOTSPOTS**.** Nature 404:990–992

IUCN (2004) PROJET CONSERVATION DE LA BIODIVERSITE ET DEVELOPPEMENT DURABLE AUX COMORES PNUD/GEF COI/97/G32/A/1G/99. Rapport final du Projet. 42pp

Myers N, Mittermeier R, Mittermeier C, da Fonseca G, Kent J (2000) BIODIVERSITY HOTSPOTS FOR CONSERVATION PRIORITIES. Nature 403:853-858

Union des Comores (2003) NATIONAL REPORT TO THE CONVENTION ON BIOLOGICAL DIVERSITY. www.cbd.int

United Nations Development Programme (UNDP) (2009) HUMAN DEVELOPMENT INDEX. http://hdr.undp.org/statistics/data/cty/cty_f_COM.html (Accessed May 2010)

United Nations Environment Programme (UNEP) (2002) L'AFRIQUE ORIENTALE ATLAS DES RESSOURCES COTIERES : REPUBLIQUE FEDERALE DES COMORES. United Nations Environment Programme, Nairobi. 154pp

Wells S (2005) ASSESSMENT, SYNTHESIS, AND GAP ANALYSIS OF EXISTING AND PLANNED ACTIVITIES IN THE COASTAL ZONE COUNTRIES OF THE AGULHAS AND SOMALI CURRENT LARGE MARINE ECOSYSTEMS (ASLME). Report to the Wildlife Conservation Society. 92pp

World Bank Group (2009) WORLD DEVELOPMENT INDICATORS DATABASE 2009. World Bank, Washington, D.C. Available from http://www.worldbank.org/data/dataquery.html (accessed May 2010)

APPENDICES

I Survey instruments

French and English versions are given

ENQUETE DE MENAGE

Enquête No.

Intervieweur: Site :
Durée: Date:
Sexe/ Age:

S12/ Quelles activités, utilisant (directement ou indirectement) les ressources marines/côtières, les membres de votre foyer effectuent ils? Activités:

_____

S13-16 ***Note à l'énumérateur:*** *pour les questions suivantes, seulement poser les questions pour les catégories qui ont été mentionnées en S12 au-dessus*

1. LA PECHE **(Tableau 2)**

- Quelles sont les principales espèces marines attrapées par les membres du foyer?
- Comment sont-elles attrapées?
- Où sont-elles pêchées? Le village le plus proche et l'endroit dans la mer.
- Chaque produit est-il généralement pour la consommation personnelle (C), pour la vente (V) ou les deux (D)?
- Où est-il vendu?
- Décrire les étapes et les gens impliqués dans la vente
- Combien coûte un kg de chaque espèce?

Tableau 2

Ressource pêchée	Méthode	Endroit	C/V/D	Lieu de vente	Méthode de vente	Prix/Kg

- Quelle espèce amène le plus de revenu au foyer?

_____

TRANSPORT MARITIME (**Tableau 3)**

- Quel genre de transport maritime les membres de votre foyer pratiquent-ils ?
- Que transportent les bateaux?
- Où vont-ils ?

Tableau 3

Type de transport	Cargaison	Destination du bateau

2. TOURISME: **(Tableau 4)**

- Décrire le secteur touristique auquel les membres du foyer participent.
- Quelles activités font-ils exactement?
- Ce secteur est-il considéré comme amenant de hautes (H), moyennes (M) ou basses (B) quantités d'argent au village et au foyer? (Donner des prix si possible)

Tableau 4

Secteur	Activité	Village (H/M/B)

3. ACTIVITES D'EXTRACTION EN DEHORS DE LA PÊCHE **(Tableau 5)**

- Enumérer ce qui est extrait de la côte ou de la mer par les membres du foyer en dehors de la pêche.
- Pour chacun, expliquer la méthode d'extraction
- Pour chacun, expliquer où ils sont extraits (Village/endroit dans la mer)
- Ces produits sont-ils généralement utilisés pour l'utilisation personnelle (U), pour la vente (V) ou les deux (D)?
- S'ils sont vendus, décrire les étapes et les personnes impliquées dans la vente.
- Pour combien un kg de chaque produit est-il vendu?

Tableau 5

Ressource extraite	Méthode	Endroit	U/V/D	Lieu et méthode de vente	Valeur (H/M/B)

S19/ **Perceptions des conditions des ressources**

- Comment décririez-vous l'état actuel des ressources suivantes dans votre village?

Tableau 7

Ressource	Tick à l'endroit approprié						
	Très mauvais	Mauvais	Moyen	Bon	Excellent	Absent	Ne sais pas
Récifs coralliens							
Eau douce							
Forêt							
Mangroves							
Herbiers marins							
Plages							
Eau de mer							

S20/ Menaces Perçues

- Selon vous, quelles sont les trois menaces principales aux ressources côtières aux Comores et qui est le responsable?

Tableau 8

Menace	Responsable

S21,22,23/ **(Tableau 9)**

- Existe-t-il des régulations ou règles informelles pour les activités suivantes?
- Donner un exemple pour chacun
- Sont-elles respectées au village? (1 = pas du tout, 5 = toujours)

Tableau 9

	Oui/Non	Exemple	Respect (1-5)
Pêche			
Vente de poissons			
Construction des maisons			
Extraction de coraux			
Extraction de sable			
Déboisement des mangroves			
Déboisement des forêts			
Transport maritime			
Braconnage			
Jeter les ordures n'importe où			

Qui les fait respecter?

_____

S26,27/ Pour les règles qui se font respecter ou d'autres projets qui ont bien fonctionné pour la gestion des côtes dans la communauté, pourquoi ont-elles fonctionné? Donnez trois raisons.

1/_____

2/_____

3/_____

- Pour les règles qui **NE** se font **PAS** respecter ou d'autres projets qui **N**'ont **PAS** bien fonctionné pour la gestion des côtes dans la communauté, pourquoi n'ont-elles pas fonctionné? Donnez trois raisons.

1/ _____

2/ _____

3/ _____

S25/

- Quels sont les trois plus grands problèmes auxquels la communauté est confrontée?

1/ _____

2/ _____

3/ _____

S28/ A quel degré êtes-vous d'accord avec les déclarations suivantes ?

	D'accord	Ni pour ni contre	En désaccord	Je ne sais pas
A long terme, la pêche serait meilleure si on enlevait les coraux				
Si on ne protège pas les mangroves, on n'aura plus de poissons à pêcher				
A part si on est pêcheur ou plongeur, les coraux ne sont pas importants				
On devrait mettre des restrictions au développement dans certaines zones pour que les générations futures puissent bénéficier de l'existence d'un environnement naturel				
Les lits d'herbiers marins n'ont aucune valeur pour les hommes				
Les tortues marines sont importantes pour le tourisme futur				

Démographie (Tableau 1)

S2-3/ Combien de personnes vivent dans votre foyer? Enumérer chaque personne dans le foyer en donnant pour chaque le sexe et l'âge. *Note à l'énumérateur: si ce n'est pas possible d'avoir l'âge exact des membres du foyer, classer en tant qu'enfant, adulte ou personne âgée.*

Qui est le chef du ménage ?

S4/ Quel est l'ethnicité du ménage? _____

S5/ Pour chaque personne de plus de 16 ans, donner le nombre d'années de scolarité.

S7/ Quelles langues sont parlées dans la maison? (*Demander pour chaque membre du foyer*)

S1/ Quel est l'emploi principal et secondaire de _____? (*Demander pour chaque membre du foyer*)

Tableau 1

Membre du foyer	Chef	Age	Genre	Scolarité	Langues	Emploi principal	Emploi secondaire

S10/ Quel est la source de revenu principale du foyer? _____

S10/ Quel est la deuxième source de revenu la plus importante du foyer? _____

S29/ **Tableau 12**

NOTE À L'ÉNUMERATEUR: *poser les questions dans la colonne de gauche – remplirez les autres colonnes. NE PAS lire les réponses des colonnes de droite.*

	NB: Les réponses dans les colonnes ci-dessous ne doivent pas être lues. Entourer la réponse correspondante.					
Est-ce que vous êtes le propriétaire de votre maison?	Oui	Non				
Nombre de chambres?						
Quel type de:						
Toit	Tuiles	Bois	Feuilles de coco / paille	Tôle	Beton	Pierres
Murs extérieurs	Carreaux	Briques/ béton	Pierre	Tôle	Coco / Paille	Bois
Fenêtres	Vitrées	Cadres	Ouvertes	Aucune		
Sols	Carreaux	Bois	Ciment	Lino	Boue	Roches
Accès à l'eau	Tuyau	Puits privé	Puits public	Rivière	Citerne	Aucun
Accès à l'électricité	Alimentation	Générateur à pétrole	Panneaux solaires	Batteries	Aucun	
Combien d'heures d'utilisation par 24h, si approprié						
Possédez-vous un bateau?	Oui	Non				
Quel type de bateau?	Vedette	Pirogue	Autre			
Combien de bateau?						
En quoi sont-ils fait?	Fibres de verre	Bois				
Comment le bateau avance-t-il?	Moteur	Voile	Pagaie			

KI PECHEURS

Enquête No.

Intervieweur: Site :

Durée: Date:

Informateur: Sexe / Age:

K1/ Zone d'étude

- Quels sont les endroits principaux où les gens du village pêchent? Donner le nom de récifs coralliens, des caractéristiques particulières et les villages qui peuvent être vus du site de pêche.

- Est-ce que les zones de pêche changent avec les saisons?

OUI NON

Comment?

_____

3/ Rôles et responsabilités de genre / K7 occupations professionnelles **(Tableau 1)**

- Enumérer toutes les activités de subsistance ou générant un revenu qui sont effectuées dans cette zone (à l'intérieur et à l'extérieur du foyer).
- Quel sexe effectue chacune des ces activités: homme, femme ou les deux?
- Dans quel group d'age se trouvent ceux qui effectuent chaque activité? (K3)
- Ranger les activités mentionnées en ordre décroissant d'importance en fonction du nombre de foyers qui en dépendent comme source de revenu (d'abord celles dont le plus grand nombre de foyers dépendent). (K4)
- Quels sont les trois acteurs les plus importants pour chaque activité? (K2)

Tableau 1

Emploi/activité	Homme/Femme / les deux	Enfant/ Adulte/ Personne âgée/ Tous	Rang	Acteurs

- Existe-t-il des activités que seuls les hommes font? Pourquoi? (K3)

_____

- Existe-t-il des activités que seuls les femmes font? Pourquoi? (K3)

_____

K19-26 PECHE **(Tableau 2)**

- Quelles sont les principales espèces marines pêchées/ attrapées par les membres du foyer?*)* (K19)
- Quelles méthodes sont utilisées pour les pêcher? (K20)
- Ces produits sont-ils généralement pour la consommation personnelle, pour la vente ou les deux? (K26)
- S'ils sont vendus, comment se passe la vente? (K22)
- S'ils sont vendus, sont-ils vendus aux gens du village (L), aux gens d'autres villages sur l'île (R), à des villages sur les autres îles des Comores (N) ou à d'autres pays (I)? (K22)
- Combien coûte un kg de chaque espèce, et est-ce que c'est considéré être d'une valeur haute (H), moyenne (M) ou basse (B) par rapport aux autres espèces vendues? (K21)
- Où est-ce que ces espèces sont principalement pêchées?
- Quand sont-elles principalement pêchées (marée, saison)? (K23)
- Quels sont les types d'impacts sur l'environnement de prendre ces espèces ? (K24)
- Selon l'avis des gens de votre communauté, quel est le niveau d'impact sur l'environnement des méthodes de pêche utilisées pour pêcher ces espèces: haut (H), moyen (M) ou bas (B)?

Tableau 2

Ressources pêchées	Méthode	Consumation / Vente/ Les deux	Méthode de vente	Marché ciblé	Prix/kg	Valeur (H/M/L)	Endroit	Quand	Type d'impact	Niveau d'impact

- Pour les espèces mentionné (dans le tableau 7), est-ce qu'il y a **plus**, **autant**, ou **moins** d'utilisateurs venant d'autres villages, d'autres îles et d'autres pays que d'utilisateurs locaux? (K24) **(Tableau 3)**

- Quelles méthodes de pêche ces groupes utilisent-ils? (K24)

- Quels sont les types d'impacts sur l'environnement de prendre ces espèces ? (K24)

- Quel est le niveau d'impact de ces pêcheurs: haut (H), moyen (M) ou bas (B)? (K24)

Tableau 3

Origine des non-résidents	Plus, autant, moins	Méthode	Type d'impact	Le niveau d'impact
Villages voisins				
Autres îles				
Autres pays				

KI OFFICIAL DE LA VILLE

Enquête No:

Intervieweur: Site :

Durée: Date:

Informateur: Sexe/ Age:

K1/ Zone d'étude

Où se trouvent les limites du village?

K3/ Rôles et responsabilités de genre **(Tableau 1)**

- Enumérer toutes les activités de subsistance ou générant un revenu qui sont effectuées dans cette zone (à l'intérieur et à l'extérieur du foyer).
- Quel sexe effectue chacune des ces activités: homme, femme ou les deux?
- Dans quel group d'age se trouvent ceux qui effectuent chaque activité? (K3)
- Ranger les activités mentionnées en ordre décroissant d'importance en fonction du nombre de foyers qui en dépendent comme source de revenu (d'abord celles dont le plus grand nombre de foyers dépendent). (K4)

Tableau 1

Emploi/activité	Homme/Femme/ les deux	Enfant/ Adulte/ Personne âgée/ Tous	Rang	Acteurs

- Quels sont les trois acteurs les plus importants pour chaque activité? (K2)
- Existe-t-il des activités que seuls les hommes font? Pourquoi? (K3)

- Existe-t-il des activités que seuls les femmes font? Pourquoi? (K3)

K8/ Ranger les groupes d'âge en ordre décroissant de quantité:

0-18 _____ 19-30 _____ 31-50 _____ plus que 50 _____

K9/ Quel est le pourcentage d'hommes et de femmes dans la population?

Hommes _____% Femmes_____%

K10/ La plupart du temps, à quel âge les gens arrêtent-ils l'école? _____

K11/ Quel pourcentage de la population peut lire et écrire? _____ %

K12/ Est-ce que vous avez des registres sur l'ethnicité dans la zone? OUI NON

- Ranger les groupes d'ethnicité en ordre décroissant de quantité?

Comorien _____ Malagas _____ Chin _____ Français _____ Autre _____

K13/ Est-ce que vous avez des registres sur la religion dans la zone ? OUI NON

- Ranger les groupes de religion en ordre décroissant de quantité?

Islam _____ Hindou _____ Christianité _____ Autre _____

K14/ Est-ce que vous avez des registres sur les langues parlées dans la zone? OUI NON

- Ranger les groupes de langues parlées en ordre décroissant de quantité?

Comorien _____ Français_____ Malagas _____ Anglais_____ Espagnol _____ Chinois _____

K15/ Mort par maladie

- Ranger les maladies du plus mortelle au moins mortelle dans ce village :

Malaria _____ Cholera _____ Typhoïde _____ SIDA _____ Autre _____

K16/ Infrastructures, commerce et propriété

- Parmi les infrastructures suivantes, lesquelles sont présentes?

Tableau 2

Infrastructure dans la communauté			
	Tick si présent		Tick si présent
Ecoles		Radio	
Docteur résident		Télévision	
Infirmières résidentes		Journaux	
Hôpitaux		Station d'épuration	
Dispensaires en fonctionnement		Usine de glace	
Electricité		Accès par route bitumée	
Téléphone		Eau courante à domicile	
Accès Internet		Services bancaires	
Bâtiments religieux		Autre:	

Quels types de commerces sont présents dans la zone étudiée? **(Tableau 3)**?

- Ranger ces commerces du plus abondant au plus rare (le plus abondant reçoit le rang 1)?
- D'où viennent les propriétaires de ces commerces?
- Où vivent-ils?

Tableau 3

Commerce	Présent	Rang	Origine des propriétaires	Lieu de résidence des propriétaires
Marché				
Restaurants/ stand de nourriture				
Petits magasins				
Banques				
Quincailleries				
Magasins de vêtements				
Charpentiers				
Garages				
Tour opérateurs				
Magasins de souvenirs				
Pharmacies				
Guides de pêche				
Masson				
Chambre d'hôtes/hôtels/auberges/resorts				

K17/ Sources et disponibilité de crédit

- Quelles sont les sources d'empreint d'argent disponibles aux gens dans les villages? Quels sont les taux d'intérêt et les conditions pour ces empreints? **(Tableau 4)**?

Tableau 4

Sources de crédit	Taux d'intérêt	Conditions

TOURISME **(Tableau 5)**

- Quels types d'activités touristiques sont-elles effectuées dans votre village? (K19)
- Comment ces services sont-ils apportés (décrire)? (K20)
- Quels sont les trois groupes principaux d'acteurs qui sont impliqués dans ces activités, de manière directe ou indirecte? (K2)
- Ce service est-il considéré comme amenant de hautes (H), moyennes (M) ou faibles (B) quantités d'argent au village?
- Quand y a-t-il le plus de demande pour ces services? (K21)
- A part les hôtels, dans quelle partie de la mer ou de la côte ces services sont-ils le plus apportés? A quelle heure ou marée? (K23)
- Selon l'avis des gens de votre communauté, est ce que l'impact est positif ou négatif et quel est le niveau d'impact sur l'environnement de chacun de ces services: haut (H) moyen (M) ou faible (B)? (K25)

Tableau 5

Activité touristique	Description	Acteurs	Valeur du service	Quand le plus de demande? (mois)	Où le service est apporté	+ve/ -ve	Niveau d'impact

- Pour chaque produit mentionné (dans le tableau 5), est-ce qu'il y a **plus**, **autant**, ou **moins** de visiteurs venant d'autres villages, d'autres îles et d'autres pays ? (K24)

Tableau 6

Service	Autres villages	Autres îles	Autres pays

4. TRANSPORT MARITIME **(Tableau 7)**

- Quel type de transport maritime opère dans la zone?
- Pour chaque type de transport, qu'est-ce que les bateaux transportent?
- Où est-ce que les vont- ils?

Tableau 7

Type de transport	Cargaison	Destination du bateau

ACTIVITES D'EXTRACTIONS EN DEHORS DE LA PÊCHE **(Tableau 8)** (K19-K24)

- Enumérer ce qui est extrait de la côte ou de la mer en dehors des animaux (K19)
- Pour chacun, expliquer comment ils sont extraits (K20)
- Quels sont les trois groupes principaux d'acteurs qui sont impliqués dans ces activités, de manière directe ou indirecte? (K2)
- Ces produits sont-ils généralement utilisés pour la consommation personnelle, pour la vente ou les deux? (K26)
- S'ils sont vendus, sont-ils vendus aux gens du village (L), aux gens d'autres villages sur l'île (R), à des villages des autres îles des Comores (N) ou à d'autres pays (I)? (K22)
- Pour combien un kg de chaque produit est-il vendu? (K21)
- Où ces produits sont-ils extraits? Dans quel village/ partie de la mer (K23)
- Quand/ à quelle saison/ à quelle marée ces produits sont-ils généralement extraits? (K23)
- Selon l'avis des gens de votre communauté, est ce que l'impact est positif ou négatif et quel est le niveau d'impact sur l'environnement de chacun de ces services: haut (H) moyen (M) ou faible (B)? (K25)

SocMon Comoros

Tableau 8

Produit	Méthode d'extraction	Acteurs	Utilisation /Vente/les deux	Marché (L/R/N/I)	Prix/kg	Quand Saison/ marée	Endroit	+ve/ -ve	Niveau d'impact

- Pour chaque produit mentionné (dans le tableau 8), est-ce qu'il y a **plus**, **autant**, ou **moins** d'utilisateurs venant d'autres villages, d'autres îles et d'autres pays que d'utilisateurs locaux? (K24) *note à l'énumérateur: les produits d'extraction doivent être les mêmes que le tableau 7*
- Si il y a un impact sur l'environnement de l'extraction par les non-résidents, est-ce que négatif ou positif ?
- Selon l'avis des gens de votre communauté, est ce que l'impact est positif ou négatif et quel est le niveau d'impact sur l'environnement de l'extraction par les non-résidents venant d'autres villages, d'autres îles et d'autres pays de chacun de ces produits: haut (H) moyen (M) ou faible (B)?

Tableau 9

Produits	Autres villages	Autres îles	Autres pays	-ve /+ve	Niveau d'impact

HOUSEHOLD SURVEY

Survey No.

Interviewer: Site:
Duration: Date:
Sex/ Age:

S12. What activities, utilizing marine / coastal resources (directly or indirectly), do members of your household participate in? Activities: _____
_____

S13-16 Note to enumerator: *for the following questions, only ask the questions for the categories already mentioned in S12.*

1. **FISHING (Table 2)**

- What are the main species caught by members of the household?
- How are they caught?
- Where are they caught? Nearest village and location in the sea.
- For each species, is it generally for personal consumption (C), sale (S) or both (B)?
- Where is it sold?
- Describe the stages and people involved in the selling process.
- How much is each species worth (per kilogram)?

Table 2

Resource fished	Method	Location	C/S/B	Place of sale	Selling process	Price / kg

- Which species generates most revenue for the household?

_____

2. MARITIME TRANSPORT (Table 3)

- What types of maritime transport do members of your household use?
- What does the boat transport?
- Where do they go?

Table 3

Type of transport	Cargo	Destination

3. TOURISM (Table 4)

- Describe the tourism sectors that members of your household are involved in.
- What are the exact activities that they do?
- Is this sector generally thought to generate a high (H), medium (m) or low (l) amount of income for the village and the household? (Give amounts if possible)

Table 4

Sector	Activity	Village (H/M/L)	Household(H/M/L)

4. EXTRACTIVE ACTIVITIES OTHER THAN FISHING (Table 5)

- What other resources (other than fish) are extracted from the coast or sea by members of your household?
- For each, explain the method of extraction
- For each, describe where they are extracted (Village / location in the sea)
- Are these products generally for personal use (U), sale (S) or both (B)?
- If sold, describe the stages and people involved in the selling process
- What is the value per kilogram of each resource? (High (H), Medium (M) or Low (L))

Table 5

Resource extracted	Method	Location	U/S/B	Place and method of sale	Value (H/M/L)

S19/ Perceptions of resource conditions

How would you describe current conditions of each of the following resources using the scale of very good (5), good (4), not good or bad (3), bad (2) to very bad (1) (Table 7)

Table 7

Resource	Tick the appropriate box						
	Very bad (1)	Bad (2)	Not good or bad (3)	Good (4)	Very good (5)	Absent	Don't know
Coral reefs							
Freshwater							
Forest							
Mangroves							
Seagrass							
Beaches							
Seawater							

S20/ Perceived threats

What are the top three major threats to the health of coastal resources and who is responsible?

Table 8

Threat	Responsible

S21, 22, 23/ **(Table 9)**

Are there rules and regulations related to the activities listed in Table 9?
Give an example of each
On a scale of 1 to 5 (l =no compliance, 5=full compliance), to what extent do people comply with coastal management rules and regulations?

Table 9

	Yes / No	Example	Compliance (1-5)
Fishing			
Sale of fish			
Construction			
Coral extraction			
Sand extraction			
Mangrove deforestation			
Deforestation			
Maritime transport			
Poaching of sea turtles			
Littering			

Who is responsible for their enforcement?

_____

S26, 27/ for the regulations that are well-respected or other projects that have worked well for coastal management in the community, why did they work well? Give three reasons

1/_____
2/_____
3/_____

For the regulations that are NOT well-respected or other projects that have NOT worked well for coastal management in the community, why did they fail? Give three reasons

1/_____
2/_____
3/_____

S25/

What are the three major problems facing the community?

1/ _____

2/ _____

3/ _____

S28/ Indicate degree of agreement with the following statements using the scale: agree (3); neither agrees nor disagree (2); disagree (1)

	Agree	Neither agree nor disagree	Disagree	Don't know
In the long run, fishing would be better if we removed the coral				
Unless mangroves are protected, we won't have any more fish to catch				
Coral reefs are only important if you fish or dive				
Fishing should be restricted in certain areas, even if no one ever fishes in those areas, just to let the fish and coral grow				
Seagrass beds have no value to people				
Sea turtles are important for future tourism				

Demographics (Table 1)

S2-3/ How many people live in your household
Note each person in the household and give the age and sex for each. Note to the enumerator: if it is not possible to determine the exact age, use the following classes: child, adult or aged.

Who is the head of the household?

S4/ What is the ethnicity of the household? _____

S5/ For each person over 16, give the number of years of schooling

S7/ What languages are spoken in the household (*for each member of the household*)

S1/ What is the primary and secondary occupation of _____? (*for each member of the household*)

Table 1

Member of household	Head?	Age	Gender	Years of schooling	Languages	Primary occupation	Secondary occupation

S10/ What is the primary source of income for the household? _____
S10/ What is the secondary source of income for the household? _____

S29/ **Table 12**

Note to the enumerator: ask the questions in the left-hand column and fill in the other columns DO NOT read the responses in the right hand columns.

	NB: The responses in the columns below must not be read aloud. Circle the correct answer.					
Are you the owners of your house?	Yes	No				
Number of rooms						
What type of						
Roof	Tiles	Wood	Thatch	Metal	Cement	Stones
Exterior walls	Tiles	Bricks / cement	Stone	Metal	Thatch	Wood
Windows	Glass	Frame	Open	None		
Floor	Tiles	Wood	Cement	Lino	Mud	Rocks
Access to water	Mains	Private well	Public well	River	Cistern	None
Access to electricity	Mains	Generator	Solar panels	Batteries	None	
How many hours of use per 24 hours (if appropriate)						
Do you have a boat?	Yes	No				
What type of boat?	Motor boat	Dugout canoe	Other			
How many boats?						
What are they made of?	Fiberglass	Wood				
How is the boat powered?	Motor	Sail	Paddle			

SocMon Comoros

KI FISHERS

Survey No.

Interviewer: Site:

Duration: Date:

Informant: Sex / Age:

K1/ Study Area

- What are the principal locations where people from the village fish? Give the name of coral reefs, specific characteristics and the villages that may be seen from the location.

- Do fishing areas change with the season?

YES NO

How?

_____

K3/ Gender Roles and Responsibilities / K7 Occupation **(Table 1)**

- Enumerate all subsistence or income-generating conducted in this area (inside and outside the home)
- Which gender conducts each of these activities: male, female or both?
- What age group conducts each of these activities? (K3)
- Rank the activities in decreasing order of importance based on the number of households that depend on their revenue (First those that the greatest number of households depend on) (K4)
- Which are the three most important stakeholders for each activity? (K2)

Table 1

Activity	Male / Female / Both	Child / Adult / Aged / All	Rank	Stakeholders

- Are there activities only conducted by men? Why? (K3)

_____

- Are there activities only conducted by women? Why? (K3)

_____

K19-26 FISHING **(Table 2)**

- Which are the principal marine species caught or trapped? (K19)
- What methods are used for fishing? (K20)
- Are these products generally for personal consumption, sale or both? (K26)
- If they are sold, describe the sales process? (K22)
- If sold, are they sold to people from this village (L), to people from other villages on this island (R), to villages on other islands of the Comoros (N) or to other countries (I)? (K22)
- How much does 1kg of each species cost, and which are considered to be of high value (H), medium value (M) or low value (L) compared to other species sold? (K21)
- Where are these species mainly fished?
- When are they mainly fished (tide, season)? (K23)
- What impacts on the environment are caused by harvest of each species? (K24)
- According to members of your community, what is the level of impact on the environment of each of the fishing methods used to catch these species High (H), medium (M) or Low (L)?

Table 2

Resource fished	Method	Personal consumption / Sale / Both	Sales process	Target market	Price/kg	Value (H/M/L)	Location	When	Type of impact	Level of impact

- For the species mentioned (in table 2), are there **more, the same or less** fishers coming from other villages, other islands and from other countries than local fishers? (K24) **(Table 3)**

- What fishing methods do these groups use? (K24)

- What impacts on the environment are caused by harvest of these species? (K24)

- What is the level of impact of these fishers: high (H), medium (M) or low (L)? (K24)

Table 3

Origin	more, the same or less	Method	Type of impact	Level of impact
Neighboring villages				
Other islands				
Other countries				

SocMon Comoros

KI TOWN OFFICIAL

Survey No:

Interviewer: Site:

Duration: Date:

Informant: Sex / Age:

K1/ Study Area

Where are the village limits?

K3/ Gender Roles and Responsibilities / K7 Occupation **(Table 1)**

- Enumerate all subsistence or income-generating conducted in this area (inside and outside the home)
- Which gender conducts each of these activities: male, female or both?
- What age group conducts each of these activities? (K3)
- Rank the activities in decreasing order of importance based on the number of households that depend on their revenue (First those that the greatest number of households depend on) (K4)
- Which are the three most important stakeholders for each activity? (K2)

Table 1

Activity	Male / Female / Both	Child / Adult / Aged / All	Rank	Stakeholders

- Are there activities only conducted by men? Why? (K3)

_____

- Are there activities only conducted by women? Why? (K3)

_____

K8/ Rank the following age groups in decreasing order of abundance:

0-18 _____ 19-30 _____ 31-50 _____ more than 50 _____

K9/ What is the percentage of men and women in the population?

Men _____% Women_____%

K10/ Generally, at what age do people leave school? _____

K11/ What percentage of the population can read and write? _____ %

K12/ Do you keep records of ethnicity in this area? YES NO

- Rank the following ethnic groups in decreasing order of abundance?

Comorian _____ Malagasy _____ Chinese _____ French _____ Other _____

K13/ Do you keep records of religion in this area? YES NO

- Rank the following religious groups in decreasing order of abundance?

Muslim _____ Hindu _____ Christian _____ Other _____

K14/ Do you keep records of languages spoken in this area? YES NO

- Rank the following language in decreasing order of abundance?

Comorian ___ French_____ Malagasy _____ English_____ Spanish _____ Chinese _____

K15/ Death from disease

- Rank these illnesses from the most morbid to the least morbid in the village

Malaria _____ Cholera _____ Typhoid _____ Aids _____ Other _____

K16/ Community Infrastructure &Business Development:

- Which of the following infrastructure is present in the area?

Table 2

Infrastructure in the community			
	Tick if present		Tick if present
Schools		Radio	
Resident doctor		Television	
Resident nurse		Newspaper	
Hospital		Sewage treatment	
Dispensary		Ice factory	
Electricity		Access by tarmac road	
Telephone		Household running water	
Internet		Banking services	
Religious buildings		Other :	

What types of businesses are present in the study area? **(Table 3)**?

- Rank the businesses from the most abundant to the rarest (the most abundant is ranked 1)?
- Where do the owners of the businesses come from?
- Where do they live?

Table 3

Business	Present	Rank	Origin of owners	Residence of owners
Market stalls				
Restaurants / Food stands				
Small shops				
Banks				
Hardware stores				
Clothes shops				
Carpenters				
Garages				
Tour operators				
Souvenir shops				
Pharmacies				
Fishing guides				
Builders				
Guest houses / hotels				

K17/ Sources and availability of credit

- What are the sources of credit available to people in the village? What are the interest rates and borrowing conditions? **(Table 4)**?

Table 4

Sources of credit	Interest rate	Conditions

TOURISM **(Table 5)**

- What types of tourist activities occur in your village? (K19)
- How are these services provided (describe) (K20)
- What are the three stakeholder groups most involved in these activities, directly or indirectly? (K2)
- Are these services considered to bring high (H), medium (M) of low (L) levels of income to the village?
- When is there the highest demand for these services? (K21)
- Apart from hotels, n which part of the coast or sea are these activities primarily carried out? At what time or tide? (K23)
- According to this community, is the impact positive or negative and what is the level of impact on the environment for each of these services: high (H0, medium (M) or low (L)? (K25)

Table 5

Tourism activity	Description	Stakeholders	Value	Time of greatest demand? (month)	Where	+ve/ -ve	Level of impact

- For each service mentioned (in table 5), are there more, the same or less visitors coming from other villages, other islands or other countries? (K24)

Tableau 6

Service	Other villages	Other islands	Other countries

4. MARITIME TRANSPORT **(Table 7)**

- What types of maritime transport operate in the area?
- For each type of transport, what do the boats transport?
- Where do they go?

Table 7

Type of transport	Cargo	Destination

5. EXTRACTIVE ACTIVITIES OTHER THAN FISHING **(Table 8)** (K19-K24)

- What is extracted from the sea or coast other than animals? (K19)
- For each, explain how it is extracted (K20)
- What are the three stakeholder groups most involved in these activities, directly or indirectly? (K2)
- Are these products generally for personal use (P), sale (S) or both (B)? (K26)
- If sold, are they sold to people from this village (L), to people from other villages on this island (R), to villages on other islands of the Comoros (N) or to other countries (I)? (K22)
- How much does 1kg of each product cost? (K21)
- Where are these products extracted from? In which village or part of the sea? (K23)
- When / during which season/ at what tide are these products generally extracted? (K23)
- According to members of your community, what is he level of impact on the environment for extraction of each of these products High (H), medium (M) or Low (L)? (K25)

Table 8

Product	Method	Stakeholders	P / S / B	Market (L/R/N/I)	Price/kg	When Season / Tide	Location	+ve/ -ve	Level of impact

- For the products mentioned (in Table 8), are there **more, the same or less** users coming from other villages, other islands and from other countries than local fishers? (K24) **(Table 3)** *note to enumerator: the products extracted must be the same as in Table 8*

- *If there is an impact on the environment from extraction by non-residents, is it positive or negative?*

According to members of your community, is the environmental impact of non-residents positive or negative and what is the level of impact: high (H), medium (M) or low (L) for each product?

Table 9

Product	Other villages	Other islands	Other counters	-ve /+ve	Level of impact

I I Basic statistics for all survey questions

Demographics

S1 Occupation

What is the primary and secondary occupation of _____? (for each member of the household)

	% household members (Primary occupation)											
Site / Village	Student	Housework	Unemployed	Services – skilled / manual	Cultivation	Public sector	Small-scale retail	Fishing	Private sector	Health sector	Animal husbandry	Other income
Chindini	18	26	5	8	5	4	11	19	0	0	0	3
Foumbouni	18	21	11	18	7	6	10	3	2	3	0	1
Hantsambou	22	21	6	9	1	7	21	12	1	0	0	1
Ikoni	28	15	18	15	2	5	9	3	2	1	0	2
Mitsamouli	19	13	23	16	1	9	8	4	4	1	0	2
GRANDE COMORE	21	19	13	14	4	6	11	8	2	1	0	2
Bambao	20	17	19	12	20	4	3	2	2	0	1	1
Bimbini	21	18	14	7	12	12	3	8	3	1	1	1
Domoni	24	18	18	11	4	10	7	7	0	0	0	0
Ouani	31	15	10	13	6	12	4	4	1	0	1	3
Pomoni	14	12	15	9	32	3	6	5	1	0	2	2
ANJOUAN	23	16	15	11	13	9	4	5	1	0	1	1
Djoyezi	21	19	13	7	10	15	6	2	4	2	0	1
Fomboni	32	18	8	9	7	13	3	2	4	2	0	2
Hamba	13	9	11	3	33	5	14	6	3	0	3	0
Hoani	20	8	24	10	14	9	5	4	1	3	2	1
Nioumachoua	22	24	5	2	4	12	7	7	2	4	2	8
MOHÉLI	23	16	12	7	12	11	6	4	3	2	1	2
COMOROS	22	17	14	11	9	8	8	6	2	1	1	2

% household members (Secondary occupation)										
Site / Village	None	Housework	Cultivation	Services – skilled/manual	Small-scale retail	Animal husbandry	Fishing	Public sector	Private sector	Other income
Chindini	73	11	2	6	3	0	2	2	0	1
Foumbouni	76	17	1	2	3	0	0	0	0	1
Hantsambou	76	9	3	3	3	0	4	0	0	1
Ikoni	69	14	2	8	4	0	2	0	0	1
Mitsamouli	72	2	4	8	3	1	5	3	1	1
GRANDE COMORE	73	11	3	5	3	0	2	1	0	1
Bambao	78	3	5	7	2	2	3	0	0	1
Bimbini	79	1	8	3	2	1	4	1	1	0
Domoni	82	3	4	5	2	2	0	1	0	1
Ouani	84	2	2	5	4	1	0	1	0	0
Pomoni	67	12	12	4	1	1	3	0	0	0
ANJOUAN	79	4	6	5	2	2	2	1	0	0
Djoyezi	66	4	11	8	3	2	1	1	1	2
Fomboni	72	9	5	4	5	1	0	1	1	0
Hamba	45	13	20	6	4	6	4	0	1	1
Hoani	53	7	16	2	9	8	2	2	1	2
Nioumachoua	67	3	10	0	4	1	7	2	1	4
MOHÉLI	63	7	12	4	5	3	2	1	1	2
COMOROS	72	8	6	5	3	2	2	1	0	1

S2 Age
S3 Gender

How many people live in your household?
Note each person in the household and give the age and sex for each.

Site / Village	Mean household size
Chindini	6
Foumbouni	5
Hantsambou	8
Ikoni	7
Mitsamouli	6
GRANDE COMORE	6
Bambao	5
Bimbini	5
Domoni	5
Ouani	6
Pomoni	6
ANJOUAN	5
Djoyezi	5
Fomboni	6
Hamba	6
Hoani	5
Nioumachoua	8
MOHÉLI	5
COMOROS	5

	% household members (age)										
Site / Village	**0- 10**	**11-20**	**21-30**	**31-40**	**41-50**	**51-60**	**61-70**	**71-80**	**81-90**	**91-100**	**101+**
Chindini	29	25	18	13	6	3	3	2	0	0	0
Foumbouni	10	20	23	17	10	8	4	6	0	1	1
Hantsambou	25	30	17	12	4	7	3	1	0	0	0
Ikoni	16	24	22	11	10	6	7	3	1	1	0
Mitsamouli	21	20	18	13	12	7	6	2	0	0	0
GRANDE COMORE	20	24	20	13	8	6	5	3	0	0	0
Bambao	30	28	19	11	7	3	2	0	0	0	0
Bimbini	26	25	19	16	6	4	2	2	0	0	0
Domoni	15	18	30	17	9	6	2	2	0	0	0
Ouani	24	27	19	13	7	5	3	1	0	0	0
Pomoni	38	26	10	13	7	2	2	0	0	0	0
ANJOUAN	27	25	19	14	7	4	2	1	0	0	0
Djoyezi	31	19	17	14	9	5	3	2	0	0	0
Fomboni	30	27	14	10	10	5	3	1	0	0	0
Hamba	39	19	12	10	7	9	2	0	0	0	0
Hoani	32	23	12	11	9	8	3	1	0	0	0
Nioumachoua	14	23	23	14	11	6	2	3	3	1	0
MOHÉLI	30	23	15	12	9	6	3	1	0	0	0
COMOROS	26	24	18	13	8	6	3	2	0	0	0

	% household members	
Site / Village	Female	Male
Chindini	54	46
Foumbouni	58	42
Hantsambou	53	47
Ikoni	53	47
Mitsamouli	53	47
GRANDE COMORE	54	46
Bambao	48	52
Bimbini	51	49
Domoni	56	44
Ouani	48	52
Pomoni	51	49
ANJOUAN	51	49
Djoyezi	48	52
Fomboni	50	50
Hamba	48	52
Hoani	46	54
Nioumachoua	54	46
MOHÉLI	49	51
COMOROS	51	49

S5 Education

For each person over 16, give the number of years of schooling

	% household members (years of schooling)					
Site / village	0	1 to 5	6 to 10	11 to 15	15 to 20	20 +
Chindini	40	12	30	17	1	0
Foumbouni	39	5	25	27	4	0
Hantsambou	31	15	32	21	1	0
Ikoni	29	5	30	29	7	0
Mitsamouli	32	3	27	32	6	0
GRANDE COMORE	34	7	29	26	4	0
Bambao	53	8	19	20	1	0
Bimbini	33	10	23	27	7	0
Domoni	38	4	20	34	4	0
Ouani	25	3	22	43	6	0
Pomoni	59	8	24	9	0	0
ANJOUAN	40	6	22	28	4	0
Djoyezi	24	11	26	30	9	0
Fomboni	28	10	30	25	6	0
Hamba	43	25	26	6	0	0
Hoani	25	20	35	15	5	0
Nioumachoua	15	4	45	33	2	1
MOHÉLI	27	14	32	22	5	0
COMOROS	34	9	27	26	4	0

S10 Household Sources of Income:

What is the primary source of income for the household?

	% households												
Site / Village	**Small-scale retail**	**Cultivation**	**Fishing**	**Services - skilled/manual**	**Public sector**	**Diaspora**	**private sector**	**Health sector**	**Pension**	**Animal husbandry**	**Salary - unspecified**	**Other income**	**None**
Chindini	15	5	58	8	3	5	3	0	0	0	0	2	0
Foumbouni	23	7	10	20	5	25	2	7	0	0	2	2	0
Hantsambou	37	0	29	12	5	5	7	0	0	0	2	2	0
Ikoni	21	6	10	21	2	27	2	2	0	0	2	6	2
Mitsamouli	22	3	12	12	10	10	5	2	0	0	10	12	0
GRANDE COMORE	23	4	24	15	5	15	4	2	0	0	3	5	0
Bambao	8	44	7	16	5	15	3	0	0	2	0	0	0
Bimbini	9	16	24	9	22	9	9	0	2	0	0	0	0
Domoni	14	3	21	14	22	14	0	2	7	2	0	0	2
Ouani	8	10	11	18	21	16	0	0	8	2	2	3	0
Pomoni	10	50	14	12	7	2	0	0	0	2	0	0	3
ANJOUAN	10	25	15	14	15	11	2	0	3	1	0	1	1
Djoyezi	17	14	0	22	24	2	7	5	8	0	0	2	0
Fomboni	22	10	2	21	17	7	10	7	2	0	0	2	0
Hamba	30	32	14	9	5	0	5	0	0	7	0	0	0
Hoani	14	17	8	19	12	3	5	8	3	5	0	3	2
Nioumachoua	12	15	21	6	27	0	0	3	0	3	0	12	0
MOHÉLI	19	17	8	17	17	3	6	5	3	3	0	3	0
COMOROS	17	16	16	15	12	10	4	2	2	1	1	3	1

What is the secondary source of income for the household?

	% households									
Site / Village	**None**	**Cultivation**	**Skilled / manual labour**	**Small-scale retail**	**Diaspora**	**Public sector**	**Fishing**	**Animal husbandry**	**Private sector salaried position**	**Other income**
Chindini	46	8	14	10	2	8	7	2	2	2
Foumbouni	20	5	15	12	32	8	0	0	3	5
Hantsambou	28	13	10	13	8	10	18	0	3	0
Ikoni	40	8	20	12	10	0	2	0	2	6
Mitsamouli	17	8	13	19	17	4	8	0	4	10
GRANDE COMORE	30	8	15	13	14	6	6	0	3	5
Bambao	40	12	25	3	8	2	3	5	0	2
Bimbini	33	25	5	4	13	7	7	2	2	2
Domoni	40	9	20	15	7	5	2	0	0	2
Ouani	44	7	21	5	18	4	2	0	0	0
Pomoni	25	30	21	9	7	0	2	4	0	2
ANJOUAN	36	17	19	7	11	4	3	2	0	1
Djoyezi	24	22	17	16	3	5	2	3	5	2
Fomboni	37	17	6	9	2	11	0	4	7	7
Hamba	29	36	4	7	0	7	7	7	4	0
Hoani	33	25	4	11	0	9	5	7	0	7
Nioumachoua	41	19	3	9	0	6	13	3	0	6
MOHÉLI	32	24	7	11	1	8	4	5	4	4
COMOROS	33	16	14	10	9	6	5	2	2	3

Coastal and marine activities

S12 Activities

What activities, utilizing marine / coastal resources (directly or indirectly), do members of your household participate in?

	% households					
Site / Village	**Fishing**	**Bathing**	**Extraction**	**Transport**	**Tourism**	**None**
Chindini	71.2	42.4	22.0	13.6	0	16.9
Foumbouni	13.3	45.0	1.7	1.7	0	41.7
Hantsambou	65.0	30.0	7.5	0	2.5	20.0
Ikoni	32.1	25.0	12.5	3.6	1.8	41.1
Mitsamiouli	38.9	42.6	7.4	1.9	1.9	35.2
GRANDE COMORE	42.8	37.5	10.4	4.5	1.1	31.6
Bambao	21.3	34.4	21.3	0	0	36.1
Bimbini	36.4	49.1	10.9	0	0	25.5
Domoni	20.3	40.7	13.6	0	0	47.5
Ouani	23.3	35.0	13.3	0	0	43.3
Pomoni	20.3	28.8	40.7	0	0	32.2
ANJOUAN	24.1	37.4	20.1	0	0	37.1
Djoyezi	18.6	13.6	47.5	1.7	0	49.2
Fomboni	13.3	10.0	28.3	3.3	0	60.0
Hamba	53.3	0	55.6	0	0	28.9
Hoani	23.3	16.7	73.3	0	0	23.3
Nioumachoua	64.9	10.8	21.6	5.4	5.4	21.6
MOHÉLI	31.0	10.7	46.7	1.9	0.8	38.3
COMOROS	32.4	29.0	25.4	2.1	0.6	35.7

FISHING

What are the main species caught by members of the household?

	% fishing households																										
Site / Village	**Scombridae**	**Carangidae**	**Serranidae**	**Istiophoridae**	**Lutjanidae**	**'sharks'**	**Sphraenidae**	**Coryphaenidae**	**Mullidae**	**Lethrinidae**	**Scaridae**	**Holocentridae**	**Octopodidae**	**Siganidae**	**Belonidae**	**Polynemidae**	**Exocetidae**	**Nasinidae**	**Clupeidae**	**Acanthuridae**	**Engraulidae**	**Labridae**	**Balistidae**	**Hemiramphidae**	**Palinuridae**	**Gempylidae**	**Chelonidae**
Chindini	90	26	7	40	19	26	21	33	7	17	5	7	0	2	7	24	5	5	0	0	0	2	0	0	0	0	0
Foumbouni	75	38	13	50	13	13	38	25	0	0	0	25	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0
Hantsambou	88	19	4	46	8	27	23	42	4	12	0	8	12	0	19	8	0	0	27	0	0	0	4	12	0	4	0
Ikoni	78	11	17	17	6	17	17	28	11	0	6	17	0	0	0	0	6	0	0	0	0	0	0	0	0	6	6
Mitsamiouli	52	52	24	29	19	10	33	10	38	5	33	19	10	14	14	5	14	0	14	0	0	0	0	0	0	5	19
GRANDE COMORE	80	28	11	37	14	21	24	30	12	10	9	12	4	3	10	14	5	2	9	0	0	1	1	3	0	3	4
Bambao	46	15	15	0	15	8	15	0	31	0	23	15	15	15	0	0	0	0	0	8	8	0	0	0	0	0	0
Bimbini	20	25	0	0	10	10	0	5	15	0	40	20	0	45	10	0	0	25	0	20	0	0	0	0	5	5	0
Domoni	100	58	33	8	25	25	17	33	0	0	8	0	8	0	0	0	0	0	0	0	0	0	8	0	17	8	0
Ouani	64	14	14	7	0	29	0	7	0	0	0	0	14	0	7	0	0	0	0	0	0	0	7	0	7	0	0
Pomoni	42	50	17	0	0	0	8	0	33	0	17	25	8	0	17	0	0	0	0	8	0	17	0	25	17	0	0
ANJOUAN	51	31	14	3	10	14	7	8	15	0	20	13	8	15	7	0	0	7	0	8	1	3	3	4	8	3	0
Djoyezi	9	82	18	9	18	0	18	0	27	9	9	0	18	0	0	0	9	0	0	0	9	0	0	0	0	0	0
Fomboni	50	38	25	0	13	0	0	13	0	0	0	0	25	13	0	0	0	13	0	13	13	13	0	0	0	0	0
Hamba	33	29	58	4	50	4	8	0	17	46	8	4	0	4	0	0	13	13	0	0	8	0	13	0	0	4	0
Hoani	43	29	43	0	7	29	0	0	0	21	0	0	0	0	0	0	14	0	0	0	14	7	0	0	0	0	0
Nioumachoua	42	21	33	8	29	13	21	0	4	25	13	0	21	4	0	0	0	4	0	0	0	8	0	0	0	0	4
MOHÉLI	36	35	40	5	28	10	11	1	10	26	7	1	11	4	0	0	7	6	0	1	7	5	4	0	0	1	1
COMOROS	59	31	21	18	17	16	16	15	12	12	11	9	7	7	6	6	4	4	4	3	3	3	2	2	2	2	2

How are they caught?

	% fishing households													
Site / Village	**Line**	**Net**	**Gillnet**	**Basket Trap**	**Spear**	**Poison**	**Iron Hook**	**Cloth**	**Gleaning**	**Dynamite**	**Diving**	**Hand**	**Machete**	**Bait**
Chindini	95	0	2	0	0	0	0	0	0	2	0	0	0	0
Foumbouni	38	75	0	0	0	0	0	0	0	0	0	0	0	0
Hantsambou	81	15	0	0	0	4	0	0	0	0	0	0	0	0
Ikoni	67	17	6	6	0	0	0	0	0	0	6	0	0	0
Mitsamiouli	62	43	0	10	0	0	0	5	5	5	5	5	0	0
GRANDE COMORE	77	19	2	3	0	1	0	1	1	2	2	1	0	0
Bambao	54	0	0	0	8	15	8	8	0	0	0	0	8	0
Bimbini	45	0	40	0	5	0	0	0	0	0	0	0	0	0
Domoni	100	0	8	0	0	0	0	0	0	0	0	0	0	0
Ouani	79	7	0	0	14	0	7	0	7	0	0	0	0	0
Pomoni	58	25	0	0	8	25	8	0	0	0	0	0	0	0
ANJOUAN	65	6	13	0	7	7	4	1	1	0	0	0	1	0
Djoyezi	64	0	0	27	9	0	9	0	0	0	0	9	0	0
Fomboni	63	25	0	13	13	0	25	0	0	0	0	0	0	0
Hamba	54	42	0	8	0	0	0	0	0	0	0	0	0	0
Hoani	36	36	7	0	0	0	0	7	0	0	0	0	0	0
Nioumachoua	83	0	4	0	4	0	0	0	0	0	0	0	0	4
MOHÉLI	62	21	2	7	4	0	4	1	0	0	0	1	0	1
COMOROS	69	16	5	3	3	2	2	1	1	1	1	1	0	0

MARITIME TRANSPORT

What types of maritime transport do members of your household use?

What does the boat transport?

Where do they go?

Site	Village	Vessel	Cargo 1	Cargo 2	Destination
	Chindini	Small boat	People	-	Comoros
	Chindini	Small boat	People	-	Comoros
	Chindini	Small boat	People	-	Comoros
	Chindini	Small boat	People	-	Comoros
GRANDE	**Chindini**	Small boat	People	Livestock	Comoros
COMORE	**Chindini**	Small boat	People	Livestock	Comoros
	Chindini	Small boat	People	-	Comoros
	Chindini	Small boat	People	-	Comoros
	Ikoni	Small boat	Livestock	-	Comoros
	Ikoni	Small boat	Livestock	-	Comoros
ANJOUAN	**Ouani**	Small boat	Vegetable/Fruit Produce	-	Comoros
	Djoyezi	Boat (size unspecified)	Vegetable/Fruit produce	-	Comoros
	Djoyezi	Boat (size unspecified)	Merchandise	-	Mayotte
	Djoyezi	Boat (size unspecified)	Merchandise	-	Madagascar
	Djoyezi	Boat (size unspecified)	People	-	Comoros
	Fomboni	Boat (size unspecified)	Vegetable/Fruit produce	-	Comoros
	Fomboni	Boat (size unspecified)	People	Fuel	Comoros
	Fomboni	Large boat	People	Merchandise	Comoros, Tanzania
MOHÉLI	**Hamba**	Small boat	Vegetable/Fruit produce	-	Comoros
	Hamba	Small boat	Vegetable/Fruit produce	-	Comoros
	Hamba	Small boat	Vegetable/Fruit produce	-	Comoros
	Hamba	Small boat	People	-	Comoros
	Hamba	Small boat	Vegetable/Fruit produce	-	Comoros
	Hoani	Small boat	Livestock	People	Comoros
	Hoani	Small boat	People	Livestock	Comoros
	Nioumachoua	Small boat	Vegetable/Fruit produce	-	Comoros

TOURISM

Describe the tourism sectors that members of your household are involved in.

What are the exact activities that they do?

Is this sector generally thought to generate a high, medium or low amount of income for the village and the household? (give amounts if possible)

Site	Village	Sector	Activity	Level of income to village	Level of income to household
GRANDE COMORE	Hantsambou	Hiking guide	Guide	Low	Low
	Ikoni	Gift shop	Shop assistant	Low	Medium
	Mitsamouli	Catering	Waitress	Medium	High
	Mitsamouli	Cooking	Waitress	-	High
ANJOUAN	Bimbini	Guiding	Guide	Low	Low
	Domoni	Accommodation	Receptionist	-	Medium
	Ouani	Accommodation	Cook	-	Low
	Ouani	Nature guiding	Guide	-	-
MOHÉLI	Hamba	Accommodation	Guide	Medium	Medium
	Hamba	Nature guiding	Guide	Medium	Low
	Hoani	Accommodation	Guide	-	Low
	Hoani	Accommodation	Guide	High	Low
	Hoani	Accommodation	Cleaning	High	Low
	Nioumachoua	Marine tour guide	Guide	-	Medium
	Nioumachoua	Nature guiding	Guide	High	-
	Nioumachoua	Nature guiding	Guide	Medium	-

EXTRACTIVE ACTIVITIES OTHER THAN FISHING

What other resources (other than fish) are extracted from the coast or sea by members of your household?

	% households				
Site / Village	**Sand**	**Gravel**	**Rocks**	**Coral**	**Shells**
Chindini	85	0	0	31	0
Foumbouni	0	0	0	100	0
Hantsambou	33	0	0	67	0
Ikoni	86	0	0	71	29
Mitsamiouli	100	0	0	0	0
GRANDE COMORE	64	0	0	43	7
Bambao	77	0	15	0	8
Bimbini	100	0	17	17	0
Domoni	75	0	0	0	13
Ouani	100	0	0	0	0
Pomoni	92	4	8	0	13
ANJOUAN	88	2	8	2	8
Djoyezi	89	36	0	0	11
Fomboni	94	6	6	0	6
Hamba	100	32	28	0	0
Hoani	98	30	16	5	7
Nioumachoua	100	0	0	13	0
MOHÉLI	96	26	12	2	6
COMOROS	89	16	10	8	7

Attitudes and perceptions

S19 Perceptions of Resource Conditions

How would you describe current conditions of each of the following resources using the scale of very good (5), good (4), not good or bad (3), bad (2) to very bad (1)

	CORAL REEFS / % households					
Site / Village	**Excellent**	**Good**	**Average**	**Bad**	**Very bad**	**Absent**
Chindini	3	72	13	6	0	6
Foumbouni	0	39	9	24	6	21
Hantsambou	8	50	0	25	13	4
Ikoni	9	12	38	15	9	21
Mitsamiouli	3	29	23	26	3	16
GRANDE COMORE	5	40	18	19	6	14
Bambao	0	47	9	19	4	21
Bimbini	5	64	14	10	5	2
Domoni	3	34	14	38	3	7
Ouani	6	27	15	30	18	3
Pomoni	11	63	20	6	0	0
ANJOUAN	5	48	14	19	6	8
Djoyezi	2	33	14	31	10	10
Fomboni	8	42	22	14	0	14
Hamba	3	53	23	17	3	0
Hoani	3	26	31	28	3	10
Nioumachoua	5	32	9	36	18	0
MOHÉLI	4	37	21	25	6	8
COMOROS	5	42	17	21	6	10

	FRESH WATER / % households					
Site / Village	**Excellent**	**Good**	**Average**	**Bad**	**Very bad**	**Absent**
Chindini	0	15	4	9	0	73
Foumbouni	7	26	14	14	5	33
Hantsambou	0	10	0	0	0	90
Ikoni	0	15	10	10	6	60
Mitsamiouli	0	20	10	20	14	35
GRANDE COMORE	2	18	8	11	5	56
Bambao	0	28	5	45	22	0
Bimbini	0	39	17	37	0	7
Domoni	2	35	11	42	9	2
Ouani	2	14	9	58	16	2
Pomoni	0	40	9	40	11	0
ANJOUAN	1	31	10	45	12	2
Djoyezi	0	8	14	56	20	2
Fomboni	2	25	25	44	3	0
Hamba	0	4	31	60	2	2
Hoani	0	31	24	37	7	2
Nioumachoua	6	42	24	21	6	0
MOHÉLI	1	21	23	45	8	1
COMOROS	1	24	14	34	9	19

Site / Village	MOUNTAIN FORESTS / % households					
	Excellent	Good	Average	Bad	Very bad	Absent
Chindini	4	40	13	31	2	10
Foumbouni	2	11	15	13	0	59
Hantsambou	0	5	5	3	0	87
Ikoni	5	18	20	5	10	45
Mitsamiouli	5	8	8	21	10	49
GRANDE COMORE	3	17	12	15	4	49
Bambao	0	24	10	62	4	0
Bimbini	0	24	12	38	12	14
Domoni	0	23	15	43	20	0
Ouani	0	15	9	57	11	9
Pomoni	0	46	18	26	8	3
ANJOUAN	0	26	12	46	11	5
Djoyezi	2	38	34	21	6	0
Fomboni	4	39	18	27	12	0
Hamba	12	50	21	17	0	0
Hoani	11	36	22	29	2	0
Nioumachoua	3	62	10	24	0	0
MOHÉLI	6	43	22	24	5	0
COMOROS	3	29	16	28	7	18

Site / Village	MANGROVES / % households					
	Excellent	Good	Average	Bad	Very bad	Absent
Chindini	5	71	7	10	0	7
Foumbouni	3	26	15	3	0	53
Hantsambou	4	15	4	11	0	67
Ikoni	3	18	37	32	0	13
Mitsamiouli	0	22	6	13	6	53
GRANDE COMORE	3	33	15	14	1	35
Bambao	0	0	0	0	0	100
Bimbini	42	42	8	8	0	0
Domoni	0	0	0	2	0	98
Ouani	0	5	0	3	0	92
Pomoni	0	2	2	0	2	94
ANJOUAN	9	10	2	2	0	76
Djoyezi	0	4	0	6	0	91
Fomboni	2	2	4	4	0	89
Hamba	0	0	0	3	10	88
Hoani	0	4	8	10	13	65
Nioumachoua	3	62	17	14	3	0
MOHÉLI	1	10	5	7	5	73
COMOROS	5	16	6	7	2	64

Site / Village	SEAGRASS / % households Excellent	Good	Average	Bad	Very bad	Absent
Chindini	10	63	0	13	0	13
Foumbouni	9	15	12	15	0	50
Hantsambou	0	26	0	13	0	61
Ikoni	6	0	14	31	3	49
Mitsamiouli	21	33	23	21	0	3
GRANDE COMORE	10	27	11	19	1	33
Bambao	12	35	18	15	3	18
Bimbini	21	49	15	11	0	4
Domoni	0	14	19	19	0	48
Ouani	0	24	8	20	8	40
Pomoni	24	45	19	2	0	10
ANJOUAN	14	37	16	12	2	19
Djoyezi	0	0	6	9	4	81
Fomboni	2	0	4	2	0	93
Hamba	0	7	37	17	7	32
Hoani	0	2	10	15	12	62
Nioumachoua	3	24	0	14	7	52
MOHÉLI	1	5	11	11	6	67
COMOROS	8	21	13	14	3	42

Site / Village	BEACHES / % households Excellent	Good	Average	Bad	Very bad	Absent
Chindini	2	54	14	17	0	0
Foumbouni	3	33	19	28	6	67
Hantsambou	5	45	13	24	3	5
Ikoni	4	26	22	30	7	22
Mitsamiouli	11	33	20	22	4	0
GRANDE COMORE	5	39	18	24	3	15
Bambao	0	24	9	48	11	13
Bimbini	4	35	4	42	11	0
Domoni	0	38	10	36	10	2
Ouani	3	17	19	29	12	3
Pomoni	0	30	0	36	16	34
ANJOUAN	1	29	9	38	12	9
Djoyezi	2	34	42	20	2	0
Fomboni	3	25	15	39	10	2
Hamba	31	51	13	4	0	0
Hoani	17	41	20	15	3	2
Nioumachoua	5	39	3	37	0	0
MOHÉLI	11	37	20	23	3	1
COMOROS	6	35	15	29	6	8

Site / Village	SEA WATER / % households Excellent	Good	Average	Bad	Very bad
Chindini	2	84	6	8	0
Foumbouni	0	58	21	19	2
Hantsambou	0	67	6	21	6
Ikoni	10	43	29	16	4
Mitsamiouli	13	40	25	21	2
GRANDE COMORE	5	58	18	17	3
Bambao	4	70	18	7	2
Bimbini	0	62	19	19	0
Domoni	2	68	16	14	0
Ouani	2	57	20	20	0
Pomoni	2	62	31	6	0
ANJOUAN	2	64	21	13	0
Djoyezi	9	49	17	25	0
Fomboni	12	52	19	13	4
Hamba	9	53	26	12	0
Hoani	17	53	21	8	2
Nioumachoua	13	71	6	10	0
MOHÉLI	12	54	19	14	1
COMOROS	6	59	19	15	1

S20 Perceived Threats

What are the top three major threats to the health of coastal resources and who is responsible?

Site / Village	% households Littering	Sand extraction	Poison	Coral extraction	Gill nets	Dynamite	Poaching	Deforestation	Coral Destruction	Fishing undersized fish	Erosion	Pollution	no threat	Destructive fishing methods	Nets
Chindini	43	19	0	17	32	43	28	0	0	23	0	8	0	2	0
Foumbouni	92	14	0	24	0	16	2	2	0	6	0	6	10	0	0
Hantsambou	79	31	13	31	10	8	8	0	0	5	0	5	5	8	0
Ikoni	48	40	17	35	10	8	6	0	2	4	0	0	15	2	0
Mitsamouli	59	41	14	25	22	49	8	2	2	20	0	0	0	2	0
GRANDE COMORE	63	29	8	26	15	26	11	1	1	12	0	4	6	3	0
Bambao	29	69	25	16	22	15	2	36	2	2	2	0	2	5	0
Bimbini	40	30	70	17	51	17	0	2	8	0	6	0	0	6	0
Domoni	62	62	10	15	10	10	2	27	0	0	0	2	0	2	0
Ouani	57	61	13	23	23	14	2	27	0	0	0	2	0	2	0
Pomoni	23	55	62	30	45	4	2	4	2	0	0	0	0	0	0
ANJOUAN	43	56	35	20	29	12	2	20	2	0	2	1	0	3	0
Djoyezi	46	60	21	12	18	5	2	0	11	0	21	4	0	2	4
Fomboni	86	46	19	18	2	5	5	0	7	0	5	11	2	0	0
Hamba	9	27	53	16	0	22	33	0	16	0	0	4	4	2	20
Hoani	46	57	31	30	4	7	11	0	11	0	6	2	0	2	9
Nioumachoua	59	9	9	9	15	9	12	6	9	0	15	0	3	3	0
MOHÉLI	50	43	27	17	7	9	12	1	11	0	9	4	2	2	6
COMOROS	52	43	24	21	18	16	8	7	5	4	4	3	3	2	2

S21 Awareness of Rules and Regulations

Are there rules and regulations related to the following activities?

	% households																			
	Fishing		Selling of fish		Construction		Coral extraction		Sand extraction		Mangrove deforestation		Deforestation		Maritime transport		Poaching		Littering	
Site / Village	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Chindini	87	13	4	96	81	19	45	55	73	27	23	77	21	79	60	40	54	46	21	79
Foumbouni	54	46	5	95	63	38	13	87	15	85	0	100	4	96	0	100	4	96	24	76
Hantsambou	50	50	3	97	22	78	50	50	61	39	5	95	8	92	3	97	11	89	51	49
Ikoni	72	28	6	94	57	43	88	12	93	7	13	88	13	88	10	90	22	78	91	9
Mitsamiouli	10	90	0	100	33	67	33	67	57	43	3	98	14	86	2	98	10	90	55	45
GRANDE COMORE	57	43	4	96	53	47	46	54	59	41	9	91	12	88	15	85	21	79	48	52
Bambao	23	77	5	95	82	18	28	72	56	44	5	95	57	43	25	75	61	39	46	54
Bimbini	31	69	38	62	58	42	69	31	71	29	84	16	31	69	15	85	73	27	22	78
Domoni	10	90	20	80	63	37	49	51	69	31	10	90	71	29	29	71	54	46	20	80
Ouani	28	72	30	70	75	25	48	52	72	28	13	87	38	62	35	65	60	40	55	45
Pomoni	10	90	7	93	53	47	53	47	71	29	3	97	58	42	12	88	75	25	32	68
ANJOUAN	20	80	20	80	66	34	49	51	68	32	22	78	51	49	23	77	64	36	35	65
Djoyezi	29	71	51	49	31	69	61	39	75	25	3	97	68	32	19	81	76	24	49	51
Fomboni	13	87	48	52	45	55	23	77	78	22	7	93	72	28	30	70	88	12	20	80
Hamba	20	80	62	38	29	71	71	29	60	40	4	96	87	13	20	80	100	0	40	60
Hoani	18	82	18	82	15	85	37	63	47	53	5	95	62	38	48	52	87	13	13	87
Nioumachoua	44	56	47	53	18	82	76	24	43	57	83	17	66	34	49	51	95	5	22	78
MOHÉLI	23	77	44	56	28	72	51	49	62	38	16	84	70	30	32	68	88	12	29	71
COMOROS	32	68	23	77	50	50	48	52	63	37	16	84	46	54	24	76	59	41	37	63

S22. Compliance

On a scale of 1 to 5 (l =no compliance, 5=full compliance), to what extent do people comply with coastal management rules and regulations?

	Level of compliance with fishing regulations / % households				
Site / Village	**1**	**2**	**3**	**4**	**5**
Chindini	0	0	2	5	93
Foumbouni	0	5	5	16	74
Hantsambou	0	0	0	31	69
Ikoni	0	3	17	21	59
Mitsamouli	33	0	33	0	33
GRANDE COMORE	1	2	7	15	75
Bambao	21	14	21	14	29
Bimbini	6	13	38	0	44
Domoni	50	0	0	0	50
Ouani	25	19	6	25	25
Pomoni	25	0	0	0	75
ANJOUAN	21	13	18	11	38
Djoyezi	12	12	18	6	53
Fomboni	38	0	0	0	63
Hamba	11	0	33	22	33
Hoani	10	20	30	30	10
Nioumachoua	8	8	0	8	77
MOHÉLI	14	9	16	12	49
COMOROS	9	6	12	13	59

	Level of compliance with regulations about the selling of fish / % households				
Site / Village	**1**	**2**	**3**	**4**	**5**
Chindini	0	0	0	100	0
Foumbouni	50	0	50	0	0
Hantsambou	0	0	0	0	100
Ikoni	0	0	0	33	67
Mitsamouli	-	-	-	-	-
GRANDE COMORE	14	0	14	29	43
Bambao	50	0	0	0	50
Bimbini	5	5	14	38	38
Domoni	8	42	25	8	17
Ouani	22	17	17	33	11
Pomoni	0	50	50	0	0
ANJOUAN	12	19	19	26	23
Djoyezi	0	7	10	38	45
Fomboni	21	0	11	54	14
Hamba	0	0	18	46	36
Hoani	36	9	36	9	9
Nioumachoua	6	6	12	12	65
MOHÉLI	10	4	15	37	35
COMOROS	11	8	16	33	31

Level of compliance with coastal construction regulations / % households					
Site / Village	**1**	**2**	**3**	**4**	**5**
Chindini	2	2	0	5	91
Foumbouni	6	6	15	0	74
Hantsambou	0	0	14	0	86
Ikoni	0	13	13	10	63
Mitsamouli	14	14	7	21	43
GRANDE COMORE	4	7	9	6	74
Bambao	7	15	11	22	46
Bimbini	7	4	36	21	32
Domoni	3	0	33	12	52
Ouani	13	8	10	38	33
Pomoni	6	19	35	19	19
ANJOUAN	7	10	23	23	37
Djoyezi	0	17	22	28	33
Fomboni	15	8	8	12	58
Hamba	23	8	31	15	23
Hoani	44	33	11	0	11
Nioumachoua	0	0	17	0	83
MOHÉLI	15	13	17	14	42
COMOROS	8	9	17	16	51

Level of compliance with coral extraction regulations / % households					
Site / Village	**1**	**2**	**3**	**4**	**5**
Chindini	0	4	24	0	72
Foumbouni	0	0	14	0	86
Hantsambou	0	6	0	17	78
Ikoni	0	5	9	16	70
Mitsamouli	13	0	13	7	67
GRANDE COMORE	2	4	12	10	72
Bambao	20	7	0	13	60
Bimbini	0	0	6	19	75
Domoni	4	4	33	30	30
Ouani	7	21	36	25	11
Pomoni	0	10	29	13	48
ANJOUAN	4	8	22	20	45
Djoyezi	3	3	17	20	57
Fomboni	36	7	7	7	43
Hamba	4	7	19	15	56
Hoani	0	10	5	5	81
Nioumachoua	0	0	8	8	85
MOHÉLI	6	5	12	12	65
COMOROS	4	6	16	15	60

Level of compliance with sand extraction regulations / % households					
Site / Village	**1**	**2**	**3**	**4**	**5**
Chindini	0	0	23	10	67
Foumbouni	0	0	14	14	71
Hantsambou	0	9	9	13	70
Ikoni	0	6	11	26	57
Mitsamouli	7	3	17	21	52
GRANDE COMORE	1	4	15	18	61
Bambao	45	3	12	15	24
Bimbini	42	11	18	13	16
Domoni	32	19	27	11	11
Ouani	2	24	51	20	2
Pomoni	29	19	33	10	10
ANJOUAN	29	16	29	14	12
Djoyezi	7	14	12	10	57
Fomboni	13	7	13	22	44
Hamba	12	0	15	35	38
Hoani	19	15	8	15	42
Nioumachoua	21	7	7	7	57
MOHÉLI	13	9	12	18	48
COMOROS	16	10	20	16	38

Site / Village	Level of compliance with mangrove deforestation regulations / % households				
	1	2	3	4	5
Chindini	0	9	36	0	55
Foumbouni	-	-	-	-	-
Hantsambou	0	0	0	50	50
Ikoni	0	0	33	17	50
Mitsamouli	0	0	0	100	0
GRANDE COMORE	0	5	30	15	50
Bambao	0	0	67	0	33
Bimbini	2	4	2	22	69
Domoni	0	50	33	17	0
Ouani	14	29	43	0	14
Pomoni	0	0	50	50	0
ANJOUAN	3	11	14	19	52
Djoyezi	0	50	50	0	0
Fomboni	33	33	0	0	33
Hamba	0	50	0	0	50
Hoani	0	0	0	0	100
Nioumachoua	0	0	11	11	78
MOHÉLI	3	9	11	9	69
COMOROS	3	9	16	15	57

Site / Village	Level of compliance with deforestation regulations / % households				
	1	2	3	4	5
Chindini	0	45	18	9	27
Foumbouni	0	0	0	50	50
Hantsambou	0	0	0	33	67
Ikoni	20	0	60	0	20
Mitsamouli	0	0	0	50	50
GRANDE COMORE	4	20	20	20	36
Bambao	23	20	29	23	6
Bimbini	6	50	19	13	13
Domoni	24	35	19	5	16
Ouani	19	38	24	10	10
Pomoni	0	47	29	24	0
ANJOUAN	15	36	24	15	8
Djoyezi	13	8	10	23	46
Fomboni	17	7	12	26	38
Hamba	0	0	11	28	61
Hoani	3	3	6	11	78
Nioumachoua	9	0	9	9	74
MOHÉLI	9	4	10	20	57
COMOROS	11	19	17	18	35

Site / Village	Level of compliance with maritime transport regulations / % households				
	1	2	3	4	5
Chindini	0	0	13	4	83
Foumbouni	-	-	-	-	-
Hantsambou	0	0	0	0	100
Ikoni	0	0	0	67	33
Mitsamouli	0	0	0	0	100
GRANDE COMORE	0	0	11	11	79
Bambao	0	7	0	33	60
Bimbini	14	14	0	29	43
Domoni	13	19	6	6	56
Ouani	5	16	32	21	26
Pomoni	0	0	14	43	43
ANJOUAN	6	13	13	23	45
Djoyezi	0	9	55	0	36
Fomboni	0	0	6	38	56
Hamba	0	33	33	17	17
Hoani	0	10	10	24	57
Nioumachoua	13	0	0	0	88
MOHÉLI	3	7	16	17	57
COMOROS	4	8	14	19	56

Site / Village	Level of compliance with turtle poaching regulations / % households 1	2	3	4	5
Chindini	0	4	11	26	59
Foumbouni	0	50	0	50	0
Hantsambou	0	0	25	0	75
Ikoni	20	10	30	20	20
Mitsamouli	20	20	0	20	40
GRANDE COMORE	6	8	15	23	48
Bambao	14	3	9	23	51
Bimbini	3	28	33	13	23
Domoni	0	3	14	7	76
Ouani	14	14	20	29	23
Pomoni	0	12	16	30	42
ANJOUAN	6	13	19	21	41
Djoyezi	2	5	7	23	64
Fomboni	6	4	8	26	57
Hamba	3	5	3	13	78
Hoani	7	10	7	7	69
Nioumachoua	3	6	3	6	82
MOHÉLI	4	6	6	16	69
COMOROS	5	9	12	19	55

Site / Village	Level of compliance with littering regulations / % households 1	2	3	4	5
Chindini	0	0	33	0	67
Foumbouni	25	0	25	0	50
Hantsambou	0	5	26	11	58
Ikoni	2	5	22	15	56
Mitsamouli	23	4	19	27	27
GRANDE COMORE	9	4	24	14	50
Bambao	8	29	33	29	0
Bimbini	25	33	17	17	8
Domoni	8	38	38	15	0
Ouani	6	30	39	24	0
Pomoni	0	21	21	32	26
ANJOUAN	8	30	32	25	6
Djoyezi	32	7	11	14	36
Fomboni	18	27	9	18	27
Hamba	6	6	38	25	25
Hoani	17	0	17	17	50
Nioumachoua	88	0	0	0	13
MOHÉLI	29	9	16	16	30
COMOROS	14	14	25	18	29

S25 Perceived Community Problems

What are the three major problems facing the community?

	% households																					
Site / Village	**Unemployment**	**Infrastructural issues**	**Lack of water**	**Lack of electricity**	**Poverty**	**Hunger**	**Poor health**	**High cost of life**	**Lack of education**	**Payment issues**	**Political issues**	**Crime**	**Education issues**	**Coastal flooding**	**River flooding**	**Flooding**	**Lack of resources**	**Payment problems**	**Community divided**	**Coastal erosion**	**Healthcare issues**	**Litter**
Chindini	7	29	3	3	19	40	29	14	24	3	5	3	12	0	0	0	5	0	3	0	3	0
Foumbouni	14	33	34	50	17	21	17	9	16	5	3	0	16	0	0	0	3	0	7	2	5	2
Hantsambou	31	18	31	0	13	31	15	3	23	3	5	3	10	0	0	0	3	0	18	0	0	0
Ikoni	25	31	27	27	13	24	11	13	13	5	20	5	2	2	0	0	4	0	7	0	5	0
Mitsamouli	49	39	27	22	25	24	20	8	8	8	4	4	6	0	0	0	2	0	8	0	0	0
GRANDE COMORE	24	31	24	22	18	28	19	10	16	5	8	3	9	0	0	0	3	0	8	0	3	0
Bambao	64	25	31	11	36	3	2	11	5	7	0	8	5	5	0	0	0	2	0	0	5	0
Bimbini	25	47	30	72	2	0	4	4	0	2	4	0	2	13	6	15	8	0	0	0	0	2
Domoni	58	5	33	9	40	4	0	12	0	14	11	4	0	0	0	0	0	7	0	0	0	5
Ouani	46	2	25	11	21	7	4	21	2	14	4	11	4	0	0	0	4	25	0	0	5	4
Pomoni	61	26	18	4	33	18	2	19	4	4	2	7	0	0	18	5	2	0	0	0	0	0
ANJOUAN	51	21	27	20	27	6	2	14	2	8	4	6	2	4	5	4	2	7	0	0	2	2
Djoyezi	37	41	37	8	24	3	10	2	5	5	10	8	0	10	0	0	5	3	5	7	5	5
Fomboni	35	13	20	50	12	10	18	10	2	13	7	7	2	8	10	7	2	12	0	0	0	7
Hamba	11	56	49	62	13	2	0	0	4	0	4	0	4	0	0	0	11	0	2	2	2	0
Hoani	28	38	22	45	13	3	0	2	0	0	2	2	3	15	17	22	2	0	3	27	2	0
Nioumachoua	3	0	3	6	26	0	15	0	0	9	9	0	0	0	3	0	6	0	0	0	3	18
MOHÉLI	26	31	27	36	17	4	9	3	2	5	6	4	2	8	7	7	5	3	2	8	2	5
COMOROS	34	27	26	26	21	13	10	9	7	6	6	4	4	4	4	3	3	3	3	3	2	2

S26 Successes in Coastal Management

For the regulations that are well-respected or other projects that have worked well for coastal management in the community, why did they work well? Give three reasons

	% households															
Site / Village	**Enforcement**	**Environmental awareness**	**Law abiding**	**Community involvement**	**Community sees it as important**	**Awareness raising activities**	**Funding available**	**Tangible benefits**	**Local associations actively involved**	**Good management**	**Local mayor actively involved**	**Nothing**	**Government actively involved**	**Communication**	**Health awareness**	**Surveillance**
Chindini	20	40	10	13	30	5	3	10	3	3	0	0	0	0	0	5
Foumbouni	10	3	18	26	28	10	13	0	3	0	15	10	3	5	0	3
Hantsambou	24	28	17	10	34	0	7	3	10	0	3	10	0	3	3	10
Ikoni	15	28	11	7	2	22	0	0	7	17	0	17	0	0	0	2
Mitsamouli	14	28	14	14	8	3	14	3	14	8	0	6	6	6	8	0
GRANDE COMORE	16	25	14	14	19	9	7	3	7	6	4	9	2	3	2	4
Bambao	65	5	23	7	0	5	2	9	0	9	2	0	0	0	0	0
Bimbini	82	33	4	4	0	0	22	0	0	2	2	0	0	0	0	0
Domoni	71	8	6	10	0	10	21	4	0	2	2	0	2	2	2	0
Ouani	67	22	22	0	0	0	8	12	0	4	10	0	2	2	8	0
Pomoni	65	8	0	12	0	22	10	2	0	4	2	0	0	0	2	0
ANJOUAN	70	15	11	7	0	7	13	5	0	4	4	0	1	1	2	0
Djoyezi	67	20	22	4	9	11	0	13	6	0	4	0	2	7	0	7
Fomboni	75	30	9	5	2	2	2	2	5	0	0	2	2	0	7	2
Hamba	45	9	20	11	14	0	7	23	5	0	2	0	11	0	0	0
Hoani	70	18	15	8	3	10	0	3	15	0	8	0	13	8	0	3
Nioumachoua	63	7	7	3	17	27	0	7	3	0	0	0	0	0	0	0
MOHÉLI	64	17	16	6	8	9	2	10	7	0	3	0	6	3	1	3
COMOROS	52	19	13	9	9	8	7	6	4	3	3	3	3	2	2	2

S28 Non-market and Non-use Values

Indicate degree of agreement with the following statements using the scale: agree, neither agree nor disagree; disagree

	'In the long run, fishing would be better if we removed the coral' (indirect, non-market value) / % households		
Site / Village	**Agree**	**Disagree**	**Neither**
Chindini	2	96	2
Foumbouni	17	83	0
Hantsambou	6	94	0
Ikoni	15	85	0
Mitsamiouli	7	89	4
GRANDE COMORE	9	89	1
Bambao	5	95	0
Bimbini	2	98	0
Domoni	2	98	0
Ouani	4	93	4
Pomoni	4	94	2
ANJOUAN	3	96	1
Djoyezi	5	95	0
Fomboni	0	100	0
Hamba	11	89	0
Hoani	9	91	0
Nioumachoua	3	97	0
MOHÉLI	6	94	0
COMOROS	6	93	1

	'Unless mangroves are protected, we won't have any more fish to catch' (Indirect non-market value) / % households		
Site / Village	**Agree**	**Disagree**	**Neither**
Chindini	88	8	4
Foumbouni	68	28	4
Hantsambou	94	3	3
Ikoni	78	20	2
Mitsamiouli	78	22	0
GRANDE COMORE	80	17	3
Bambao	33	65	2
Bimbini	71	29	0
Domoni	57	43	0
Ouani	22	73	5
Pomoni	65	35	0
ANJOUAN	51	48	1
Djoyezi	70	24	6
Fomboni	71	27	2
Hamba	66	34	0
Hoani	54	46	0
Nioumachoua	75	25	0
MOHÉLI	67	31	2
COMOROS	66	33	2

Site / Village	*'Coral reefs are only important if you fish or dive' (existence non-use value) / % households* Agree	Disagree	Neither
Chindini	13	87	0
Foumbouni	27	73	0
Hantsambou	24	76	0
Ikoni	42	58	0
Mitsamiouli	22	76	2
GRANDE COMORE	26	74	0
Bambao	24	76	0
Bimbini	17	83	0
Domoni	25	75	0
Ouani	18	78	4
Pomoni	49	49	2
ANJOUAN	27	72	1
Djoyezi	23	73	4
Fomboni	25	75	0
Hamba	9	91	0
Hoani	29	69	2
Nioumachoua	40	57	3
MOHÉLI	25	73	2
COMOROS	26	73	1

Site / Village	*'Fishing should be restricted in certain areas, even if noone ever fishes in those areas, just to let the fish and coral grow' (existence value) / % households* Agree	Disagree	Neither
Chindini	95	5	0
Foumbouni	98	2	0
Hantsambou	92	8	0
Ikoni	93	7	0
Mitsamiouli	90	8	2
GRANDE COMORE	94	6	0
Bambao	86	12	2
Bimbini	91	4	5
Domoni	89	5	5
Ouani	92	5	3
Pomoni	84	11	5
ANJOUAN	88	7	4
Djoyezi	95	2	3
Fomboni	97	2	2
Hamba	98	2	0
Hoani	88	12	0
Nioumachoua	87	11	3
MOHÉLI	93	5	2
COMOROS	92	6	2

Site / Village	*'Seagrass beds have no value to people' (existence value) / % households* Agree	Disagree	Neither
Chindini	19	81	0
Foumbouni	38	63	0
Hantsambou	17	83	0
Ikoni	24	73	2
Mitsamiouli	27	73	0
GRANDE COMORE	25	75	0
Bambao	25	75	0
Bimbini	36	64	0
Domoni	43	53	3
Ouani	31	69	0
Pomoni	39	61	0
ANJOUAN	35	64	1
Djoyezi	13	85	2
Fomboni	18	80	2
Hamba	10	90	0
Hoani	26	74	0
Nioumachoua	14	86	0
MOHÉLI	17	82	1
COMOROS	25	75	1

Site / Village	*'Sea turtles are important for future tourism' (bequest value) / % households* Agree	Disagree	Neither
Chindini	98	2	0
Foumbouni	92	2	6
Hantsambou	100	0	0
Ikoni	96	4	0
Mitsamiouli	98	0	2
GRANDE COMORE	97	2	2
Bambao	88	10	2
Bimbini	92	6	2
Domoni	94	4	2
Ouani	80	19	2
Pomoni	91	7	2
ANJOUAN	89	9	2
Djoyezi	100	0	0
Fomboni	98	0	2
Hamba	95	5	0
Hoani	98	2	0
Nioumachoua	97	3	0
MOHÉLI	98	2	0
COMOROS	94	4	1

Socioeconomic status

S29 Material style of life

What material is your house's _____ made from?

	ROOF / % households							
Site / Village	**Metal**	**Concrete**	**Palm thatch**	**Stone**	**Wood**	**Tiles**	**Metal and palm**	**Mud**
Chindini	68	24	2	3	3	0	0	0
Foumbouni	30	68	0	2	0	0	0	0
Hantsambou	55	45	0	0	0	0	0	0
Ikoni	48	46	0	2	2	2	0	0
Mitsamiouli	48	48	0	0	0	4	0	0
GRANDE COMORE	**49**	**46**	**0**	**1**	**1**	**1**	**0**	**0**
Bambao	36	38	26	0	0	0	0	0
Bimbini	15	38	24	22	2	0	0	0
Domoni	17	59	19	3	0	0	2	0
Ouani	32	59	7	0	2	0	0	0
Pomoni	25	25	50	0	0	0	0	0
ANJOUAN	**25**	**44**	**25**	**5**	**1**	**0**	**0**	**0**
Djoyezi	62	19	19	0	0	0	0	0
Fomboni	43	18	33	2	2	0	0	2
Hamba	50	2	48	0	0	0	0	0
Hoani	23	23	52	0	2	0	0	0
Nioumachoua	33	14	44	0	0	8	0	0
MOHÉLI	**43**	**16**	**38**	**0**	**1**	**1**	**0**	**0**
COMOROS	**39**	**36**	**21**	**2**	**1**	**1**	**0**	**0**

	WALLS / % households						
Site / Village	Bricks	Metal	Stone	Thatch	Mud	Wood	Tiles
Chindini	20	54	25	0	0	0	0
Foumbouni	77	23	0	0	0	0	0
Hantsambou	48	35	15	3	0	0	0
Ikoni	79	13	9	0	0	0	0
Mitsamiouli	74	15	9	2	0	0	0
GRANDE COMORE	**60**	**28**	**12**	**1**	**0**	**0**	**0**
Bambao	58	3	2	37	0	0	0
Bimbini	65	2	2	18	11	2	0
Domoni	70	0	14	16	0	0	0
Ouani	71	3	7	17	0	0	2
Pomoni	32	2	7	39	19	2	0
ANJOUAN	**59**	**2**	**6**	**26**	**6**	**1**	**0**
Djoyezi	51	0	15	10	20	3	0
Fomboni	41	10	10	5	34	0	0
Hamba	4	22	0	2	69	2	0
Hoani	25	7	10	5	42	10	2
Nioumachoua	49	3	5	5	35	3	0
MOHÉLI	**34**	**8**	**9**	**6**	**39**	**4**	**0**
COMOROS	**51**	**12**	**9**	**11**	**14**	**1**	**0**

	WINDOWS / % households						
Site / Village	Frame	Open	Glass	Metal shutters	Wooden shutters	Palm shutter	No window
Chindini	25	37	20	0	0	0	17
Foumbouni	25	30	40	0	0	0	5
Hantsambou	35	28	35	0	0	0	3
Ikoni	42	15	42	0	0	0	2
Mitsamiouli	19	17	59	0	0	0	6
GRANDE COMORE	**29**	**25**	**39**	**0**	**0**	**0**	**7**
Bambao	29	35	2	0	0	0	35
Bimbini	36	36	5	0	0	0	22
Domoni	27	42	18	0	0	0	13
Ouani	42	8	27	0	0	0	23
Pomoni	19	30	0	0	0	0	52
ANJOUAN	**31**	**30**	**10**	**0**	**0**	**0**	**29**
Djoyezi	47	24	15	5	0	0	8
Fomboni	60	13	5	8	0	0	13
Hamba	51	33	2	2	0	2	9
Hoani	65	13	7	2	0	0	13
Nioumachoua	32	16	5	8	22	0	16
MOHÉLI	**53**	**20**	**7**	**5**	**3**	**0**	**12**
COMOROS	**37**	**25**	**19**	**2**	**1**	**0**	**16**

	FLOOR / % households						
Site / Village	Cement	Lino	Mud	Stones	Tiles	Sand	Wood
Chindini	64	27	2	7	0	0	0
Foumbouni	42	28	0	0	30	0	0
Hantsambou	53	30	0	0	18	0	0
Ikoni	33	35	0	0	33	0	0
Mitsamiouli	34	26	0	2	38	0	0
GRANDE COMORE	45	29	0	2	24	0	0
Bambao	56	23	19	2	0	0	0
Bimbini	67	13	7	0	13	0	0
Domoni	53	26	2	2	17	0	0
Ouani	38	29	5	4	25	0	0
Pomoni	54	16	28	2	0	0	0
ANJOUAN	53	21	13	2	11	0	0
Djoyezi	54	25	8	0	12	0	0
Fomboni	33	38	26	0	3	0	0
Hamba	40	16	42	0	0	0	2
Hoani	43	21	28	0	7	2	0
Nioumachoua	46	30	24	0	0	0	0
MOHÉLI	43	26	25	0	5	0	0
COMOROS	47	25	12	1	13	0	0

How does your household access electricity and water?

Site / Village	ELECTRICITY / % households Mains	Generator	Hydro	Solar	None
Chindini	72	3	0	0	24
Foumbouni	100	0	0	0	0
Hantsambou	93	0	0	0	8
Ikoni	91	4	0	0	5
Mitsamiouli	93	2	0	0	6
GRANDE COMORE	90	2	0	0	9
Bambao	51	12	31	0	7
Bimbini	40	53	0	0	7
Domoni	92	5	0	0	3
Ouani	88	0	0	0	12
Pomoni	32	39	0	0	29
ANJOUAN	61	21	6	0	11
Djoyezi	88	0	0	0	12
Fomboni	78	7	0	0	15
Hamba	0	7	0	0	93
Hoani	0	26	0	4	70
Nioumachoua	64	6	0	0	31
MOHÉLI	48	9	0	1	42
COMOROS	66	11	2	0	20

Site / Village	WATER / % households Mains	Private well	Public well	River	Cistern
Chindini	0	0	12	0	88
Foumbouni	0	16	7	0	76
Hantsambou	34	0	34	0	32
Ikoni	40	18	35	0	7
Mitsamiouli	0	28	14	0	58
GRANDE COMORE	15	14	20	0	50
Bambao	90	3	7	0	0
Bimbini	98	0	0	2	0
Domoni	100	0	0	0	0
Ouani	93	5	2	0	0
Pomoni	79	12	5	4	0
ANJOUAN	92	4	3	1	0
Djoyezi	91	4	5	0	0
Fomboni	95	5	0	0	0
Hamba	90	0	10	0	0
Hoani	71	2	27	0	0
Nioumachoua	76	0	0	21	3
MOHÉLI	85	2	9	3	0
COMOROS	67	7	10	1	15

Does your household own a boat?
What type?

Site / Village	% households Motorboat	Dugout canoe
Chindini	37	10
Foumbouni	13	2
Hantsambou	38	38
Ikoni	13	0
Mitsamiouli	11	15
GRANDE COMORE	**22**	**11**
Bambao	2	2
Bimbini	5	24
Domoni	12	2
Ouani	10	3
Pomoni	3	10
ANJOUAN	**6**	**8**
Djoyezi	0	5
Fomboni	0	0
Hamba	9	24
Hoani	0	0
Nioumachoua	8	29
MOHÉLI	**3**	**10**
COMOROS	**10**	**9**

III SocMon project costs

This project received 27,670USD of funding from the NOAA Coral Reef Conservation Program which was supplemented by the same amount of matched funding from C3 and Comorian project partners.

IV SocMon Team

	Name	Affiliation	Home village	Phone (+269)
GRANDE COMORE	Al yas aa Ben Ahmed	C3	Ikoni	7737504
	Amir		Moroni	3316904
	Athoumani Soule		Vouvuni	3357012
	Hadija Ali Abdullah		Mbeni	3388239
	Maoulida Kamal	C3	Ikoni	7737504
	Mmadi Djae		Moroni	3328455
ANJOUAN	Abderemane Charif Mouhidine	HTC	Ouani	3372016
	Abderemane Maoulide	Action Comores	Ouani	3356019
	Fatima Mahamoud	HTC	Ouani	3373978
MOHELI	Ahamadi Boustrine		Hoani	
	Ahmed Dahalane	HUPPE	Hoani	3385465
	Ibrahim Mohamed		Hoani	
	Mouzidalifa Youssouf	HUPPE	Hoani	3355929
	Nema Madi	HUPPE	Hoani	
	Soumda Nikidadi		Hoani	

V Socmon variables selected

SocMon code[1]	Variable	Method of data collection[2]
	Area	
K1	Study area	Sec, KI
	Stakeholders	
K2	Stakeholders	KI
K3	Gender roles and responsibilities	KI
	Demographics	
K4	Population	Sec
K5	Number of households	Sec
K6	Migration rate	Sec
K7, S1	Occupation	Sec, S
K8, S2	Age	S, KI
K9, S3	Gender	Sec, S, KI
K10, S4	Ethnicity	Sec, S, KI
K11	Literacy	Sec, KI
K12, S5	Education	Sec, S, KI
K13	Religion	Sec, KI
K14, S7	Language	Sec, S, KI
S8	Household size	S
S9	Household structure	S
S10	Sources of income	S
	Health	
K15	Infant mortality rate, prevalence of disease	Sec, KI
	Infrastructure and business	
K16	Community infrastructure, Business development and ownership	KI
K17	Source of and access to credit	KI
	Coastal and marine activities	
K18, S12	Activities	Sec, S, KI
K19, S13	Goods and services	Sec, S, KI
K20, S14	Methods	Sec, S, KI
K21	Value of goods and services	S, KI
K22, S15	Target markets and marketing mechanisms	S, KI
K23	Use patterns	KI
K24	Levels of use by outsiders	KI
K25	Levels and types of impact	KI
K26	Use of goods and services	KI
K27, S16	Tourist profile	?

	Governance	
K28	Management body	Sec
K29	Management plan	Sec
K30	Enabling legislation	Sec
K31	Management resources	Sec
K32	Formal tenure and rules	Sec
K33	Informal tenure and rules, customs and traditions	Sec
K34	Community incentives	Sec
K35, S17	Stakeholder participation and satisfaction	Sec
K36	Community and stakeholder organisations	Sec
S18	Membership in organisation and groups	Sec
K37	Power and influence	Sec
	Attitudes and perceptions	
S19	Perceptions of resource conditions	S
S20	Perceived threats	S
S21	Awareness of rules and regulations	S
S22	Compliance	S
S23	Enforcement	S
S25	Perceived community problems	S
S26	Successes in coastal management	S
S27	Challenges in coastal management	S
S28	Non-market and non-use values	S
	Socioeconomic status	
S29	Material style of life	S

[1](K=Secondary source/Key Informant/Focus Group Interview; S=Survey)
[2](S=Survey, KI=Key Informant interview, FGI=Focus group interview, Sec=Secondary sources, Obs=Observation)

VI Presentations at International Conferences

Reef Conservation UK, London December 2008
Western Indian Ocean Marine Science Association Symposium, Reunion Island, August 2009

VII SocMon WIO Training Report, Moroni, Comoros

VIII SocMon village feedback materials

BUILDING NATIONAL NETWORKS FOR SOCIOECONOMIC MONITORING OF MARINE RESOURCES IN THE WESTERN INDIAN OCEAN

Chris Poonian[1] and Innocent Wanyonyi[2]

[1]Community Centred Conservation (C3), 17 Northcliffe Drive, London, N20 8JX, UK. info@c-3.org.uk
[2]Coastal Oceans Research and Development Indian Ocean (CORDIO) East Africa #9 Kibaki Flats,Jomo Kenyatta Public Beach, Bamburi, P.O. Box 10135, Mombasa 80101, Kenya. socmon@cordioea.org

What is SocMon-WIO?

Coastal resources cannot be managed from a biophysical focus alone because local community attitudes towards and uses of coastal resources have serious implications for the health of coastal ecosystems. The management of coastal resources has equally serious implications for the socioeconomic health of the community. Socioeconomic Monitoring – Western Indioan Ocean (SocMon-WIO) is part of the Global Socioeconomic Monitoring Initiative for Coastal Management, which aims to increase coastal managers' capacity to understand and incorporate the socio-economic context of the coastal resource user communities into coastal management programmes. This is done by providing clear and concise guidance on how to establish socioeconomic monitoring programmes at sites around the world. Over 18 individual sites now employ SocMon in the region: in Comoros, Kenya, Madagascar Mozambique, South Africa, Rodrigues, Seychelles and Tanzania. In 2008, SocMon-WIO began to establish national-level networks in the Comoros, Tanzania and Kenya.

SocMon-WIO in the Comoros

The Union of the Comoros is situated at the northern end of the Mozambique Channel, equidistant from continental Africa and Madagascar. It comprises three volcanic islands: Grande Comore, Anjouan and Mohéli. The islands host a number of ecologically important and vulnerable coastal habitats including coral reefs mangroves and seagrass which support high marine biodiversity.



Tuna fisherman, Anjouan

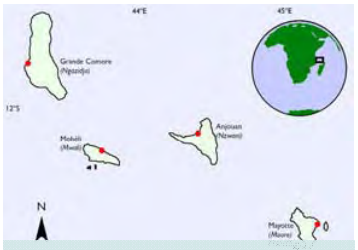


Lobster fishermen, Grande Comore



Green Turtle hatchling, Moheli

The three main obstacles to the country in the implementation of effective coral reef management strategies are: lack of technical and financial resources; demographic pressure and an absence of fair distribution of the benefits arising from natural resources. Although clearly the fundamental origin of these difficulties, the human dimension of coral reef management has not been fully considered to date. To address these issues, this work aims to set up a SocMon-WIO network across all three islands of the Union of the Comoros to generate effective options for coastal resource management.



Union of the Comoros



SocMon training workshop participants



SocMon training workshop, Grande Comore



Interviewing a fisherman on Grande Comore

Progress so far

The Comoros network is now well underway, with participation from government institutions, national NGOs, the University of the Comoros and local village associations. A training workshop was held for 15 participants in June 2008, secondary data have been collected and fieldwork will begin in early 2009 . Community Centred Conservation (C3), a British NGO has been responsible for the implementation of the network which will initially provide recommendations for the establishment of a network of Marine Protected Areas throughout the Comoros.

Acknowledgements

Funding for this work was generously provided by the National Oceanographic and Atmospheric Administration (NOAA) Coral Reef Conservation Fund

BUILDING A NATIONAL NETWORK FOR SOCIOECONOMIC MONITORING OF MARINE RESOURCES IN THE COMOROS

Chris Poonian[1]*, Maoulida Kamal[2], Mouzidalifa Yssouf[2,3], Jaffar Mouhhidine[4], Innocent Wanyonyi[5]

[1]Community Centred Conservation (C3), 17 Northcliffe Drive, London, UK, N20 8JX. info@c-3.org.uk
[2]C3-Comores, BP 8310 Moroni, Iconi, Grande Comore, Union of the Comoros.
[3]Hoani Uni Pour La protection de l'Environnement (HUPPE), Hoani, Mohéli, Comoros.
[4]HTC-Anjouan, Anjouan, Comoros.
[5]Coastal Oceans Research and Development Indian Ocean (CORDIO) East Africa #9 Kibaki Flats,Jomo Kenyatta Public Beach,Bamburi, P.O. Box 10135, Mombasa 80101, Kenya.





ABSTRACT

The SocMon-WIO programme aims to establish a regional network of locally-based teams to conduct regular monitoring of socioeconomic indicators to provide data for management decision-making. Over 18 individual sites now employ SocMon in the region: in Comoros, Kenya, Madagascar Mozambique, South Africa, Rodrigues, Seychelles and Tanzania. In 2008, SocMon-WIO began to establish national-level networks in the Comoros, Tanzania and Kenya. The Comoros network is now well underway, with participation from government institutions, national NGOs, the University of the Comoros and local village associations. The Comoros are characterized by extreme anthropogenic pressure and high levels of biodiversity and this combination of attributes highlights the importance of assessing, understanding and monitoring socioeconomic elements to strengthen and develop appropriate participatory management and conservation strategies. Although progress has been slowed by political unrest between the islands, a SocMon training workshop was held for 15 participants in June 2008, secondary data have been collected and fieldwork was completed in 2009. Here we present preliminary findings of this work and options for their integration into national marine resource management policy.

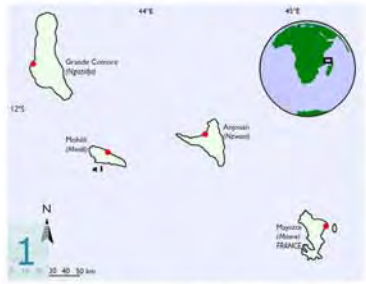
WHAT IS SOCMON-WIO?

Coastal resources cannot be managed from a biophysical focus alone because local community attitudes towards and uses of coastal resources have serious implications for the health of coastal ecosystems. The management of coastal resources has equally serious implications for the socioeconomic health of the community. Socioeconomic Monitoring – Western Indian Ocean (SocMon-WIO) is part of the Global Socioeconomic Monitoring Initiative for Coastal Management, which aims to increase coastal managers' capacity to understand and incorporate the socio-economic context of the coastal resource user communities into coastal management programmes. This is done by providing clear and concise guidance on how to establish socioeconomic monitoring programmes at sites around the world. Over 18 individual sites now employ SocMon in the region: in Comoros, Kenya, Madagascar Mozambique, South Africa, Rodrigues, Seychelles and Tanzania. In 2008, SocMon-WIO began to establish national-level networks in the Comoros, Tanzania and Kenya.

SOCMON-WIO IN THE COMOROS

The three islands of the Union of the Comoros: Grande Comore, Anjouan and Mohéli **(1)** have been identified as one of the worlds 43 marine priority ecoregions and one of the worlds 'hottest hotspots' for global biodiversity. They host a wide range of endemic species and contain important marine ecosystems, including coral reefs, mangroves and seagrass beds. This habitat diversity has resulted in a high level of biodiversity and endemism, including endangered species such as the hawksbill turtle *(Eretmochelys imbricata)* and the dugong *(Dugong dugon)*. Thus the Comoros are one of the world's critical sites for conservation investment and action as well as holding high potential for ecotourism.

In contrast to their biological wealth, the Union of the Comoros is considered to be one of the poorest countries in the world and a 'least developed country'. The political situation remains unstable since the Union's independence from France in 1975.











The current political system consists of an autonomous government for each island and a Union Government responsible for the islands as a whole. Further to this the Comoros are facing severe demographic pressure with their population estimated to double within the next 33 years.

As a direct result of the current demographic, economic and political situation of the country, the unique biodiversity and natural resources of the Comoros are under serious threat from over-exploitation due to population growth, paucity of knowledge, severe demographic pressure and lack of local conservation management capacity. The impacts of over-exploitation are most evident in coastal areas as a result of the economic importance of artisanal fishing and the consequently high levels of settlement in the coastal regions.

The Comoros' combined attributes of extreme anthropogenic pressures on natural resources and high biodiversity highlights the importance of assessing, understanding and monitoring socioeconomic elements to strengthen and develop appropriate participatory management and conservation strategies. This project aims to build on previous baseline work by C3-Comores and local partners to identify sites for community based coastal resource management and adaptive management processes using SocMon methodology.

PROGRESS SO FAR

The Comoros network is now well underway, with participation from government institutions, national NGOs, the University of the Comoros and local village associations. A training workshop **(2,3)** was held for 15 participants in June 2008, secondary data have been collected and fieldwork **(4)** was completed at several sites on each island in June 2009. Community Centred Conservation (C3), a British NGO, in collaboration with local partners has been responsible for the implementation of the network which will initially provide recommendations for the establishment of a network of Marine Protected Areas throughout the Comoros.

FOR FURTHER INFORMATION

Poonian CNS, Hauzer MD, Moussa Iboura C (in press) CHALLENGES FOR EFFECTIVE AND SUSTAINABLE CO-MANAGED MARINE PROTECTED AREAS: A CASE STUDY FROM THE COMOROS ISLANDS. Proceedings of the 11th International Coral Reef Symposium, Ft. Lauderdale, Florida, 7-11 July 2008

Hauzer M, Poonian C, Moussa Iboura C (2008) MOHEI MARINE PARK, COMOROS – SUCCESSES AND CHALLENGES OF THE CO-MANAGEMENT APPROACH. In Obura DO, Tamelander J, Linden O (Eds) Ten years after bleaching - facing the consequences of climate change in the Indian Ocean.CORDIO Status Report 2008. Coastal Oceans Research and Development in the Indian Ocean/Sida-SAREC. Mombasa. http//:www.cordioea.org











ACKNOWLEDGEMENTS

Thanks are due to CORDIO-EA for technical support and advice. Local Ulanga groups, University of the Comoros, HTC Anjouan, Action Comores Anjouan, HUPPE Mohéli and other associations provided assistance and support for fieldwork activities. Funding for this work was generously provided by the National Oceanographic and Atmospheric Administration (NOAA) Coral Reef Conservation Fund. We are also grateful to WIOMSA for providing travel grants. C3-Comores is a collaborative initiative between Community Centred Conservation (C3) and the National Ministry of the Environment, Union of the Comoros.

C3 CORDIO NOAA

www.c-3.org.uk
www.cordioea.org

SOCMON WIO TRAINING
Moroni, Comoros
15 – 18 June, 2008



A report submitted to
the NOAA Coral Reef Conservation Program

Delphine Malleret-King
Technical Advisor SocMon WIO
September, 2008

Contents

1. **Introduction** **1**

2. **Day 1: Introduction to SocMon WIO** **4**

3. **Day 2. Data collection** **11**

4. **Day 3. Household Surveys and Key informant interview practice** **15**

5. **Day 4. Data entry, analysis and dissemination** **15**

Appendix I: Test interview guides ***19***

Appendix II: Interview guide Key informant interviews ***23***

1. Introduction

The training on which this report concentrates was carried out on a request from C3 (Community Centred Conservation), based in Iconi, Grande Comore. The organisation's main focus is the conservation of threatened marine species and habitats in Comoros. C3 coordinated the training and organized the logistics.

1.1. SocMon at Grande Comore.

Socioeconomic monitoring in the Western Indian Ocean region has been initiated and developed under the auspices of CORDIO EA (Coastal Oceans Research and Development Indian Ocean – East Africa) since 2000. SEMP (SocioEconomic Monitoring Project) then SocMon WIO (since 2005) have provided technical expertise to help pilot and set up socioeconomic monitoring throughout the region. NOAA (the US National Oceanographic and Atmospheric Administration) and now ReCoMap (Regional Programme for the Sustainable
Management of the Coastal Zones of the Indian Ocean Countries) supports the expansion of the SocMon network across the Western Indian Ocean region.

This SocMon training was supported by NOAA through direct funding to C3 for its proposal entitled "Socioeconomic assessment and identification of potential sites fro community based reef management in the Comoros" and through funding to CORDIO East Africa which funded the the SocMon WIO technical advisors to carry out the training.

The training was held in Moroni at Centre d'Animation Culturelle de Mtsangani *(Cultural Activities Centre of Mtsangani - CASM)*, a cultural and youth centre. One of the objectives of C3 is to identify sites to establish socioeconomic monitoring around the three Comorian islands through a socioeconomic assessment. Participants to the course were thus from Grande Comore, Anjouan and Moheli.

Participants selected by C3 for the training were future enumerators for the socioeconomic assessment. The general SocMon training programme was thus adapted to respond to C3's needs to train enumerators rather than a SocMon team. Although general aspects of monitoring were covered, the emphasis was kept on data collection methods. The objectives of the training were thus to:

- Introduce SocMon WIO and SocMon WIO Guidelines
- Understand what monitoring means and where data collection fits in

- Identify the portfolio of data collection methods available, their strengths and weaknesses
- Practising data collection
- Basic overview of data entry and analysis in the context of qualitative and quantitative data.

The training included formal presentations, brainstorming sessions, role plays and 'real' field practice so that participants could learn by doing (see the following agenda).

This report summarises the main points of the training.

1.2 Training timetable

Day	Subjects	Material
15/06	Presentation of participants, expectations	
	Introduction to the training / Introduction to C3	C3
	Introduction to SocMon WIO (aims, structure, activities, the network)	
	Break (10h15)	
	What are survey and evaluation?	Memo sheet
	Construction of a survey team	ToRs
	Main aims of the survey on the representative sites- Overall objective, Discussion	C3
	Lunch (12h45)	
	Introduction to the Guide SocMon WIO, utilization	SocMon-WIO Guide
	Familiarization with the guide, choice of variables with regards to aims	Table of variables and aims
	Break (15h15)	
	Overview of data collection methods	
	Discussion: how to choose methods	
	End (17h)	
16/06	Four main methods - details	Memo sheet
	Role playing games, discussion – how to be a good interviewer	Memo sheet
	Break	
	Discussion, exchanging experiences	

	Choice of methods according to the variables chosen on the first day, and modification of the interview guides for a selection of variables	Variables and Interview guides
	Lunch (13h00)	
	Testing interview questions (in the field)	Interview guides
	Discussion of and finalization of interview guides	
	Fieldwork planning – Selection of interviewees and attitudes	Memo sheet
	Fin (17h)	
17/06	Briefing – Selection of interviewees	Interview guides
	Finalization of the programme for each group of participants	
	Participants interview key informants	
	Lunch and discussion	
	Participants conduct questionnaire	
	End of the day – Discussion about the experience	
18/06	Discussion on the difficulties associated with collecting data and how to overcome them	
	What to do with the data collected?	
	Break	
	Practice of the introduction and analysis of data in groups	Data, guide
	Groups presentation of results- Discussion	
	Lunch	
	Discussion and role play on reporting the information	Guide
	What are the next steps?	
	End	

2. Day 1: Introduction to SocMon WIO

The training started with participants introducing themselves and sharing their expectations from the training. Most participants emphasized their will to better understand the way socioeconomic studies are carried out and expressed their need to obtain better knowledge of research methods.

The trainer stressed that although the training would include some formal presentation, most of the work would have to be done by the participants themselves through discussions and sharing experience. The point of the training was to share experience and concerns and find solutions to problems arising throughout the monitoring process.

2.1 The participants

Name	**Organization**
1. Mohamed Hassan Hamadi	C3-Comores Enumerator
2. Nassouria Mbaé	AIDE (Association d'Intervention pour le Développement et l'Environnement - *Association of Intervention for Development and the Environment)*
3. Adjilane Soifeni	Ministry of Tourism, Grande Comore
4. Al'yas'aa Ben Ahmed	C3-Comores
5. Maoulida Kama	C3-Comores
6. Said Abdoullah Athoumani Bakar	FADC (Fonds d'Appui au Développement Communautaire – *Community Development Support Funds*)
7. Athoumani Soulé	
8. Kamal Moussa	IPAC (Initiative Pour Alternative Citoyenne – *Initiative for an alternative citizen*)
9. Mmadi Djaé	APE (Association pour la Protection de l'Environnement – *Association for the protection fo the Environment*)
10. Ali Issahaka	AIDE
11. Djamaldine Mouhidine	HTC (Halieutique Tourisme Conservation – *Marine Resources Tourism Conservation*)
12. Zaitoune Soilihi	Action Comores
13. Dhoifiri Chamouine	CASM

14. Nema Madi	HUPPE (Hoani Uni pour la Protection de l'Environnement – *Hoani United for the Protection of the Environment*)
15. Hamada Isoufi Mai	Moheli Marine Park
16. Melissa Hauzer	C3-Comores
17. Daniella Blake	C3-Comores
18. Claire Forbes	C3-Comores

As mentioned earlier, participants originated from Grande Comore, Anjouan and Moheli as the three islands are targeted by C3 proposed work. Most participants belonged to conservation or environment-related organizations or associations. Their experience of socioeconomic studies varied, however most had been enumerators for household surveys. After each relevant session, Memo Sheets were distributed to the participants.

2.2. What is SocMon?

SocMon was introduced briefly to the participants so they understood the context in which the training was given. The fact that the SocMon is a network which can provide technical support was emphasized.

SocMon is :

- A regional initiative which aims to improve marine and coastal resource management in the Western Indian Ocean.
- Based on site level monitoring systems.
- Based on community participation.
- A set of guidelines aiming to standardize socioeconomic monitoring in the region. It provides a list of priority variables, interview guides, data entry templates and analysis sheets.
- Tool which needs to be adapted to sites' needs. The *SocMon WIO Guidelines* are a companion *to the GCRMN Socioeconomic Manual for Coral Reef Management (GCRMN Manual).*
- A network of experts.

SocMon's Objectives

SocMon's objectives are to:

- Establish socio-economic monitoring at a representative suite of sites in the region,

managed by different partners under a single framework.

- Facilitate the coordination of monitoring activities in the Western Indian Ocean through a socioeconomists' network, promoting standardized monitoring throughout the region.
- Establish a coordinated data-archiving, -reporting and -sharing protocol for partners within the region and applicable to sites outside.
- Establish reporting and educational guidelines for disseminating the information widely, targeting managers, government policy makers, resource users and schools.

To achieve the following:

- Increased capacity for socioeconomic monitoring in MPA and marine management organizations in the Western Indian Ocean.
- Improved capacity to analyse the socioeconomic situation and integrate this information into decision-making process.
- Increased awareness in government and policy circles of the socioeconomic conditions of artisanal fishers, their resources and vulnerability to shocks.
- Effective networking and information sharing among management organizations from local to regional levels.
- Improved sustainability of monitoring programmes in management organizations.

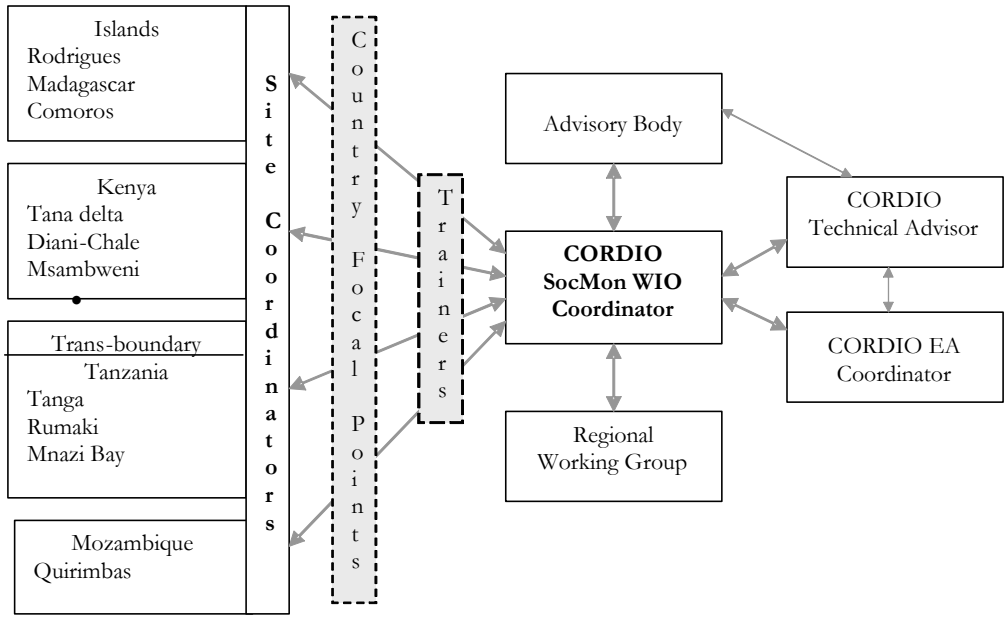
SocMon / SEMP activities

SocMon's achievements so far:

- Coordination and set up of socioeconomic monitoring at **12 sites** since 2000. The project was called SEMP (socioeconomic monitoring project) until 2004.
- Materials developed (Field Notes, Trainers' Guides, reports, Socioeconomic Monitoring Guidelines published in English, Kiswahili, French and Portuguese)
- A Partners' workshop: to start SocMon WIO – decide on its structure, adapt the SocMon Guidelines from guidelines developed for other regions.
- SocMon web page, hosted by www.wiomsa.org
- An experts' network in development
- Network of trainers
- A site database

SocMon structure

SocMon's structure was discussed at the Partnership Workshop in August 2005. The resulting structure is summarised in the diagram below.



Why become part of SocMon WIO?

The advantages of being a member of a network such as SocMon are:

- Pooling resources to achieve region-wide results will mean economy of effort at a site level (e.g. one database will be developed for all involved, etc.)
- Build on existing global and regional tools and experiences (e.g. training agendas, SocMon publications) as well as frameworks for planning
- Tie into global network of sites – compare results and lessons learned
- Tap into existing and future sources of funding
- Be part of the global marine conservation community – e.g. Global Coral Reef Monitoring Network, Reefbase, International Coral Reef Action Network, WorldFish Centre, United Nations
- Partnerships are more attractive to donors

Involving communities

The introduction to SocMon was not detailed however it was pointed out to participants that community participation is a central part of SocMon, as it is, ultimately the way to

make the system sustainable. It is also a way to involve communities, build their capacity to take decisions, strengthen the relationships between projects, resource managers and communities.

Participants were not familiar with the way communities can be involved. One of the key ideas is to involve communities from the beginning of the monitoring and any management process. Communities are usually involved in refining objectives, data collection, dissemination so that they own the process and can make decisions on the basis of the knowledge gathered.

2.3. Understand what socioeconomic monitoring means and why do it?

What does socioeconomic monitoring mean?

Participants were asked to brainstorm to define 'monitoring'. They had a rough idea of what monitoring is and mentioned:

- Collecting data frequently
- Entering and analysing data
- Looking at how things change

The facilitator then completed the definition of monitoring as in the Monitoring MemoSheet. The 8 steps of monitoring were written up and the **facilitator insisted on the importance of the dissemination**.

1. Define objectives and clear aspect of change to monitor
2. Establish indicators – a characteristic that provides a concise answer to the question
3. Determine methods to measure
4. Determine a frequency of measurement
5. Collect the data
6. An ongoing reflection on the methodology, indicators, etc.
7. Analysis of the data to decide the next step
8. Feedback of the information into decisions, planning etc.

It was made clear that without disseminating the results and articulating their implications for management, there was little point in having a monitoring system at all. The 8 points were kept in mind throughout the training to make sure all points except step 6 would be covered.

Participants' understanding of what socioeconomic meant was more rather more restricted with no full knowledge of the dimensions it encompasses. Time was spent so that everyone was clear on the fact that "socioeconomic" integrates social, cultural, political, economic, historical dimensions of a community. Each term was discussed as well.

Why do socioeconomic monitoring?

A small discussion was led, investigating the reasons why would one want to carry out socioeconomic monitoring (in the context of natural resource management and conservation). Reasons emphasised by the trainer were:

1. Because managing natural resources means influencing natural resource users' attitudes, perceptions, behaviour towards natural resources
2. Because the health of natural resources, especially in small islands is intimately linked to the food security and safety of coastal communities
3. Because to influence users' behaviour, managers/organizations need a very good understanding of these users' and the factors that influence their behaviour (what do they do and why they do it in the way they do it?)
4. The context in which these actors/users exist, their constraints, their activities, evolve all the time. Monitoring this evolution is the only way in which decisions can be taken based on current information. It is also the only way to get feedback on the effectiveness of any intervention and on this basis adapt decisions in order to increase effectiveness and/or reduce interventions' negative effects.

2.4. Composition of a monitoring team

This theme was not covered in details. Details are provided in this report for the benefit of C3 which will lead the socioeconomic monitoring process, at least in the first phase.

A team is usually composed of at least a coordinator, a person responsible for data entry and analysis, and enumerators. These roles and responsibilities are summarised below. The site coordinator is responsible for:

- Communication between communities, the SocMon site team, the SocMon WIO network and the SocMon WIO regional coordinator. It is his/her role to update all the partners in SocMon with activities, progress, questions raised at all levels.
- Coordination of site activities. Coordinate field work, analysis, planning, results dissemination in collaboration with the regional SocMon team.

- Send regular reports to the SocMon regional coordinator (results of the monitoring). This in order to the Regional Coordinator to compile a yearly report (integrating all sites' information) to be published in special editions of the WIOMSA Journal.
- Coordination and maintenance of a site database, and linking with the regional database when it is established.
- The integration/coordination of SocMon with other local initiatives, in collaboration with the National Focal Point.

The team is responsible for:

- Recruiting enumerators
- Conducting fieldwork in selected villages with community representatives
- Disseminating the monitoring results to the relevant community and to the appropriate stakeholders.

2.5. Objectives of C3 activities including the SocMon training

Daniella Blake from C3 gave an informal presentation of the objective of the work that C3 was proposing to do in the near future and how the socioeconomic monitoring fitted in.

C3 is proposing to carry out a socioeconomic assessment in 20 to 30 villages along the coast of the 3 islands with the objectives of setting up socioeconomic monitoring processes in 20 villages. Themes of interest to C3 which relate to threatened marine species are resource use patterns, stakeholder characteristics, gender issues, stakeholder perceptions, resource governance, traditional knowledge and market attributes for extractive uses. A wide socioeconomic assessment is planned in order to define a much more focused socio economic monitoring process. In a first stage C3 would coordinate the monitoring.

2.6. How to use the SocMon WIO Guidelines

The diagram on 'How to Use the SocMon WIO Guidelines' was quickly summarized by the facilitator; and participants were asked to browse the *SocMon WIO Guidelines* to get a feel for them. French versions of the Guidelines were distributed (one for 2). The Variable and Goal tables of the Guidelines were distributed to all.

Identifying objectives and variables

The participants formed 4 groups on a site basis and were asked to determine objectives for management and monitoring at their sites using the *Guidelines*. This was to illustrate how the monitoring process works and introduce the way to work with the *Guidelines*. Once objectives were determined, then variables to monitor would have to be chosen.

This was a difficult exercise. Participants had difficulties to step back from "activities to do". However, each team identified some objectives. On the basis of these, they identified variables that could be monitored, using the *Guidelines*. Although most of the participants will not be involved at the planning stages of the socioeconomic assessment and monitoring set up to be led by C3, it was important to take them through these steps in order to contextualise the data collection within the monitoring process.
Detailed discussions on data collection methods were postponed to the next day.

3. Day 2. Data collection

3.1. Data collection

Discussion on methods

Methods were discussed through a brainstorming session: Observation, Secondary Sources, Key informant/ Focus Groups interviews and Survey (Questionnaire). The discussion covered:

- Methods description
- Sampling process
- Type of information and level of detail
- Strengths and weaknesses
- Preparing interviews
- How to formulate the questions
- Prompting
- Interview length
- Interviewers attitudes (listening, dress code, choice of interviewer, introduction)
- How to choose a method
- Avoiding bias

Points covered in this session are summarized in the data collection MemoSheets.

Participants were very unfamiliar with more participatory methods. Often for them, socioeconomic study is “a survey”. This was discussed at length, strong emphasis was again put on contextualising the survey.*

A survey is one tool amongst many in a portfolio of data collection tools and it is only one part of a monitoring/assessment process. This was repeated over and over. Household surveys have some strengths but they also have many weaknesses, they should be a tool treated with care and sometimes maybe all other tools have to be investigated before embarking on a survey. The design of a household survey is critical for its success and reliability. A questionnaire can only be well designed if a lot of qualitative information has been gathered first through key informants or focus group discussions. The questionnaire needs then to be tested, refined and then finally carried out.

Participants had not been exposed to the collection and or analysis of qualitative data. The usefulness of qualitative data, at all stages was thus emphasised throughout the training

Questions raised by participants

One of the points raised by participants was that of payment of informants. This was lengthily discussed during the training, as this is a common issue throughout the region.

Examples were given from other areas:

- To offer drinks and maybe a small token of appreciation, adapted to the local context when focus groups are held as they can last 2 or 3 hours. However, it is best if they do not last more than 2 hours.
- That it is NOT possible to give something to all surveyed households. BUT it is important to make sure that questionnaires are kept short.
- To make sure informants are aware of the non payment policy.

It was also stressed to the participants that if people do not want to answer questions, it is fine. Being interviewed is bothersome. As the relationship becomes stronger between the team and the communities, and as communities get more involved, the problem should be reduced.

3.2. Role play

In this session, participants were divided into pairs so that each participant had an opportunity to play the role of informant and that of interviewer. Topics chosen for the interview role play were: traditions and customs (K33), and marine activities (K18).

All participants chose to discuss marine activities as their knowledge about traditions and customs was insufficient. Each participant had 10 minutes to interview his/her informant.

Several lessons came out of the role play:

- The importance of formulating questions as clearly and unambiguously as possible. The need to reformulate questions if the informant has not understood the question
- The importance for the interviewer to introduce him/herself (some had not)
- The importance of good note taking
- Not to ask leading questions
- The importance of asking open ended question
- The importance of exploring all marine activities rather than just fishing as most of the participants did.

This session was very successful. It helped the participants getting a feel for carrying out semi structured interviews, and practise what was discussed in previous sections.

Two participants were then asked to lead focus groups on two different topics. This gave very good live examples on the difficulties in leading a focus group and to avoid pitfalls. Some lessons were learned:

- The facilitator has to listen and not interpret information received in his own way
- Stick to the questions that are investigated (in one instance the topic investigated was totally transformed by the facilitator)
- Encourage all participants in a group to speak
- Make sure that the set up of the group enables the participants to express their opinions (e.g. lead different groups for men and women if women are not able to share opinions when men are present, in one of the role plays one of the topics concerned women but none of the women participant spoke)

3.3. Adapting and testing interview guides

Variables were chosen in order to develop a test questionnaire and key informant interview guides. Participants were asked to adapt the questions on the basis of the Guidelines. The idea was to develop a questionnaire, test it in Moroni and then carry it out in Iconi the day after.

Variables to investigate in the questionnaire were:

- Household demographic characteristics (S1, S2, S3)
- Occupations (S5)
- Participation and satisfaction in resource management (S17)
- Membership in community organisation (S18)
- Household perception of resource conditions (S19)
- Household perception of threats to marine resources (S20)
- Household perception of compliance to rules and regulations (S22)

In the middle of the afternoon, participants went to interview informants in the streets using the questionnaire guide and all participants interviewed one or two informants.

When regrouped, participants discussed their experience. Participants read out what informants had responded to the “perception question”. One of the main objectives of this session was for the participants to get first hand experience in interviewing people, using questions they had developed themselves. A second one obviously was to test the questions and evaluate whether they made sense to the informants. No problems were noticed.

At the end of the day a key informant’s interview guide was developed for the following variables:

- Marine and coastal activities, methods, species targeted, use patterns (K18, K20, K23)
- Type and level of impacts (K25)
- Community based organizations and associations (K36)

When formulating the questions for the key informants interview, it was stressed the aim of the interview was to get information at the community level and not at the individual level.

The importance of the way questions are formulated was one of the key issues emphasized during the whole day.

4. Day 3. Household Surveys and Key informant interview practice

A debriefing was held at the C3 office in Iconi. Participants were given a print out of the questionnaires and the logistics of the fieldwork were discussed.

The interview guides (see Appendices) were discussed in depth, participants were asked to translate each question. This had two purposes: to agree on the best translation of terms for which there was no direct translation in Comorian, and secondly it enabled the trainer to check that all participants understood perfectly the questions as lengthy discussions were carried out.

Participants were sent in pairs to interview households in Iconi, and key informants. A meeting had been arranged with the Village Chief to interview him about Iconi's marine activities.

The exercise was a success, participants interviewed up to four informants each. No particular problems emerged. The trainer went with one of the C3 staff and the CASM participant to interview the Village Chief. One of the objectives was to be able to evaluate better the skill of the staff as he probably would take on an important role in the socioeconomic assessment. His skills were found to be very good.

The whole day was spent in the field.

5. Day 4. Data entry, analysis and dissemination

5.1. Field work experience

A discussion was held on the experience and lessons learnt during the practice fieldwork in Iconi. Some issues that emerged from this discussion were:

- Difficulty to find a key informant
- Difficulty to keep the informant from digressing
- Interruptions
- In some instances the results also showed limited capacity to explore comprehensively a topic
- Introducing the study/monitoring to the informants.

This enabled us to discuss the importance of:

- Planning the work well, in a real situation key informants would be selected and appointments would be taken with the informant
- Carefully plan the discussion and prepare the interview guide
- Avoid public places easily accessed so that privacy can be kept during the interview
- A carefully prepared introduction has to be produced

5.2. Data entry and analysis

This session was not detailed as SocMon has developed a database to make data entry, basic data analysis and reporting easier for the SocMon teams. It was however decided to go through, with the participants, what happens to the data once it is collected and look at the differences in the analysis of qualitative and quantitative data.

Tables were developed on flip charts for the qualitative and the quantitative information. Participants read their own results and data were entered. The process of analysis was shown (by hand). The point was not to show how to do complex statistical analysis but look at what information could be obtained from simple data with a first simple analysis using % and averages. Qualitative information was also entered, and participants were shown how to interpret the data obtained.

It was stressed at this point that the monitoring process is only monitoring if the same data is collected at a pre determined frequency and most of the analysis, after the first socioeconomic assessment (used as baseline) will be looking at changes between the sets of data.

In order to illustrate the importance of taking good notes, participants were asked to read aloud the results of their neighbours' interviews. This is an important lesson as the people entering and analyzing the data are often not the enumerators.

5.3. Disseminating and feeding back the information

The Matrix below was presented to the participants.

Who needs to be informed of *SocMon* findings and their implication for planning, management, policy?	What needs to change or not?	What is the best media to use?	Does it already exist?	Resources required?

In order for participants to become more familiar with the dissemination process, each team was asked to prepare a dissemination strategy for fictitious results of SocMon. Results for which they had to identify a strategy were that between 2007 and 2012 SocMon detects:

- 50% increase in the number of fishermen using dynamite fishing
- A jellyfish fishery has appeared with no formal rules and regulations to exploit this resource
- Decreased compliance of informal rules, regulations, traditions and customs

Each team was asked to:

- Identify the implication of the results for resource management
- Which stakeholders they were going to inform of the results (local community, national authorities, legislators, elders, research institution etc)
- What were the implications for the stakeholders (develop legislation, initiate research programmes, change behaviour)
- How they could communicate the information (community meetings, internet, letters etc)

This was a very productive session. Participants got a good grasp of what is involved in planning the dissemination of the information, the different level of stakeholders and the importance of feeding back the information for the decision making process. Some points were raised:

- Need to consider carefully the target audience when choosing a medium to communicate results (does the target generally have a radio for example if local radio is chosen) but also how easy it is to use the medium wanted.
- Giving balanced information on the basis of existing facts and results. From the results above, the only thing that the team could say to managers, is that there is a risk, pressure on resource is increasing and what the consequences may be.

A very long discussion was initiated by some of the participants on who the dissemination needs to target and the order in which it needs to target the different levels. Participants were not always at ease with the concept of community participation and were uncomfortable with the fact that communities on who the results are based should be informed in all cases. Informing the communities of the changes detected by the monitoring has a number of purposes including:

- Communities are involved in the process and should own the results
- Informing communities (or rather presenting the results in an appropriate way to the whole community) will enable that community make decisions on the basis of the changes detected
- In the case of detecting an increase in destructive activities, it is important to inform the communities and investigate the reasons why this has happened, before going to the authorities which might take forceful actions. If an organization such as C3 is involved in the monitoring and linking stakeholders and this organization failed to discuss the issue with the communities first, it would loose the trust of the communities it works with!

The training challenged the participants in its format as, participation in debates, brainstorming session were not natural to them. However after a day the ice was broken.

5.4. Introducing SocMon WIO to a wider audience

No formal planning session was held with the participants. Melissa and Daniella informed the participants rather that the plan was to start the socioeconomic assessment later in 2008.

The trainer, Melissa and Daniella had a separate meeting after the end of the training looking at the different variables to investigate, the number of villages which can be realistically studied, how to go about the socioeconomic assessment.

5.5. The end

Key outcome of the training were summarised to end the training and certificates of completion were distributed.

Appendix I: Test interview guides

TEST QUESTIONNAIRE

ICONI

C3/SocMon WIO

Nom enquêteur : Village :

Durée: Date :

Nom enquêté **:** N° Questionnaire:

I. INFORMATION DEMOGRAPHIQUE ET OCCUPATION

(S1, S2, S3, S5)

Membres du Ménage * (a)	Âge (b)	Sexe (F/M) c	Niveau d'éducation accompli ***(aucun, primaire, secondaire) (d)	Occupation principale	Occupation secondaire
CF					

*Identifiez toutes les personnes vivant dans la maison par le nom ou rôle (par exemple grand-mère)

**L'information sur les affiliations religieuses peut être trop sensible à demander au niveau

du ménage. Il peut être plus approprié de l'obtenir au niveau de la communauté par l'informateur principal ou les sources secondaires.
***demander seulement si > 16 ans
CF: indiquez qui est le chef de famille (par exemple mère) et si c'est une femme indiquez si elle est veuve (V).

II. PERCEPTION

S17. Participation et satisfaction dans la prise de décision, la surveillance :

Sur une échelle de 1 (pas de participation) à 5 (pleinement active) dans quelles mesures participez vous à la **surveillance/l'application des réglementations** liées aux tortues marines ?

Sur une échelle de 1 à 5, quel est votre niveau de satisfaction avec votre participation de votre niveau de participation à la gestion/protection des tortues marines ? A l'avenir aimeriez vous participer plus, moins, pareil ?

S18. Adhésion à une organisation ou à un groupe :

Vous ou un membre de votre famille est il membre d'une association communautaire.
Quelles organizations ?_____, _____, _____

S19. Perceptions de la condition des Ressources :

Comment décrivez-vous des états actuels de chacune des ressources suivantes en utilisant l'échelle de (5) très bon, bon (4), ni bon ni mauvais (3), mauvais (2) à (1) très mauvais (éditer la liste des ressources pour refléter les ressources du site) ?

Récifs coralliens :_____

S20. Perception des menaces perçues

Selon vous quelles sont les 3 principales menaces à la santé des ressource marine à Iconi ?_____, _____, _____

S22. Perception du respect de la réglementation ?

Selon vous, sur une échelle de 1 à 5, dans quelles mesures les gens d'Iconi respectent-ils la réglementations sur la pêche et l'extraction du sable ?

TEST QUESTIONNAIRE

ICONI

C3/SocMon WIO

Interviewer : *Village :*

Duration: *Date :*

Name of interviewee ***:*** *N° Questionnaire:*

I. DEMOGRAPHIC AND OCCUPATIONAL INFORMATION

(S1, S2, S3, S5)

*Members of household * (a)*	*Age (b)*	*Sex (F/M) c*	*Level of education attained ***(none, primary, secondary) (d)*	*Main occupation*	*Secondary occupation*
HH					

** Identify all the persons living in the household by name and role (e.g. grandmother)*

*** The information about religious affiliation may be too sensitive to ask at a household level. It could be more appropriate to get this information on the community level from a key informant or out of secondary sources.*

**** ask only if > 16 years old*

HH: indicates that this is the household head (e.g. mother) and if it's a woman indicate if she is a widow (W).

II. PERCEPTION

S17. Participation and satisfaction in taking decisions, monitoring :

On a scale from 1 (no participation) to 5 (fully involved)

in what ways are you participating in ***monitoring/applying rules concerning sea turtles ?***

On a scale from 1 to 5, what is your level of satisfaction with your level of participation in the management /protection of sea turtles ?

In the future: would you like to participate more, less, on an equal level ?

S18. Membership in an organisation or a group :

Are you or is one of your family members part of a community association,

Which organisations ?_____, _____, _____

S19. Perceptions of the condition of Resources :

How would you describe the present condition of each of the following resources using a scale from (5) very good, good (4), neither good nor bad (3), bad (2) and (1) very bad (edit the list of resources to reflect the resources in the study site) ?

Coral reefs :_____

S20. Perceived threats

From your point of view, what are the three main threats to the health of marine resources in Iconi ?_____, _____, _____

S22. Perception of respecting the rules ?

From your point of view, on a scale from 1 to 5, in what ways do the Iconi inhabitants respect the rules concerning fishing and sand-extraction ?

Appendix II: Interview guide Key informant interviews

ACTIVITES DE PÊCHE A ICONI

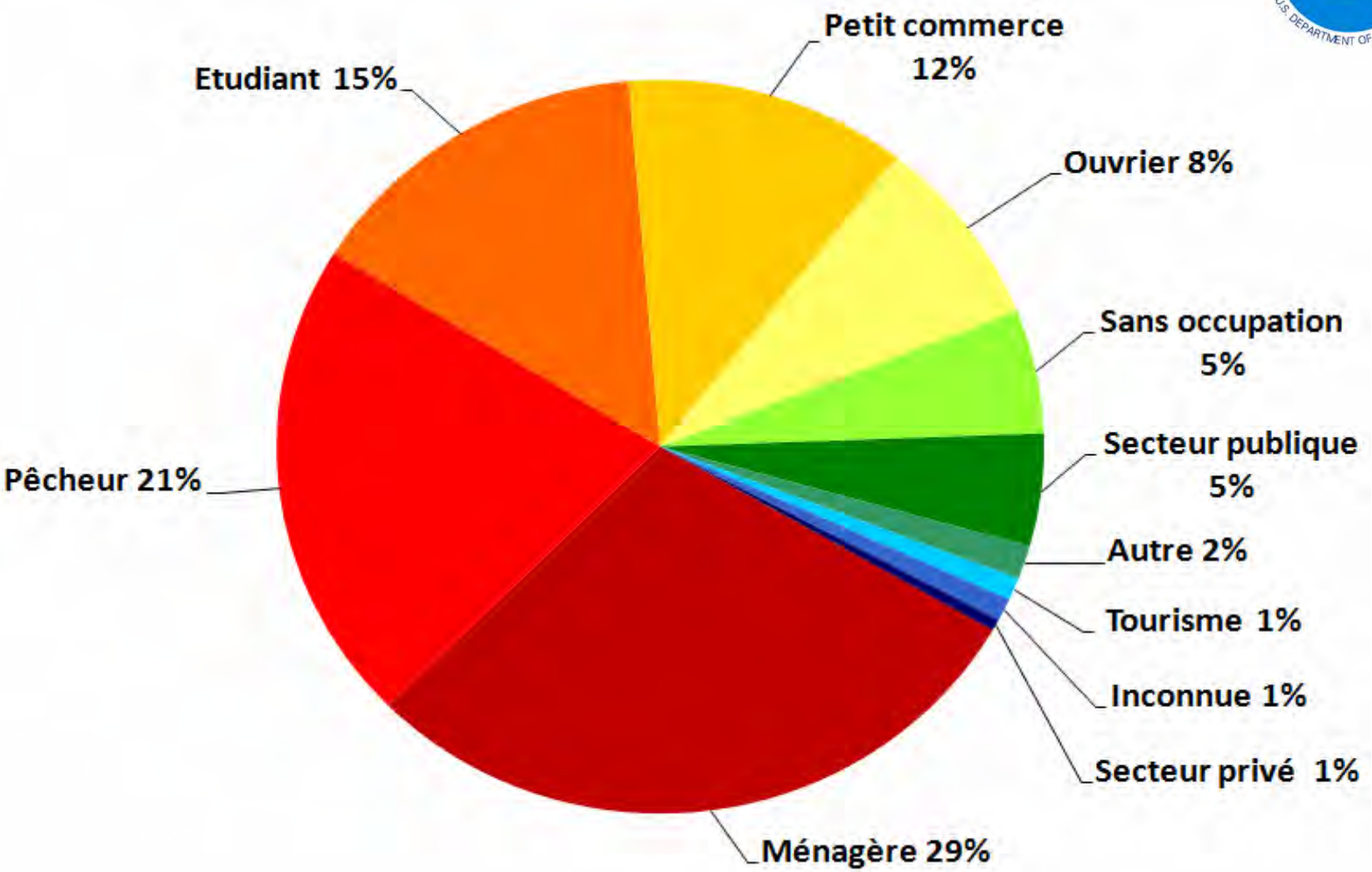
1. Quelles Activités de pêches sont menées à Iconi ?
2. Quelles méthodes sont utilisées pour pêcher ?
3. Pour chaque méthode – Quelle espèce sont ciblées par ces méthodes ?
4. Pour chaque méthode – Quel est l'impact de cette méthode sur l'environnement marin ? Et quel niveau d'impact (haut, moyen, faible) ?
5. Quelles organizations communautaires à Iconi ont une influence sur l'exploitation des ressource marines ?

Appendix B. Interview guide Key informant interviews

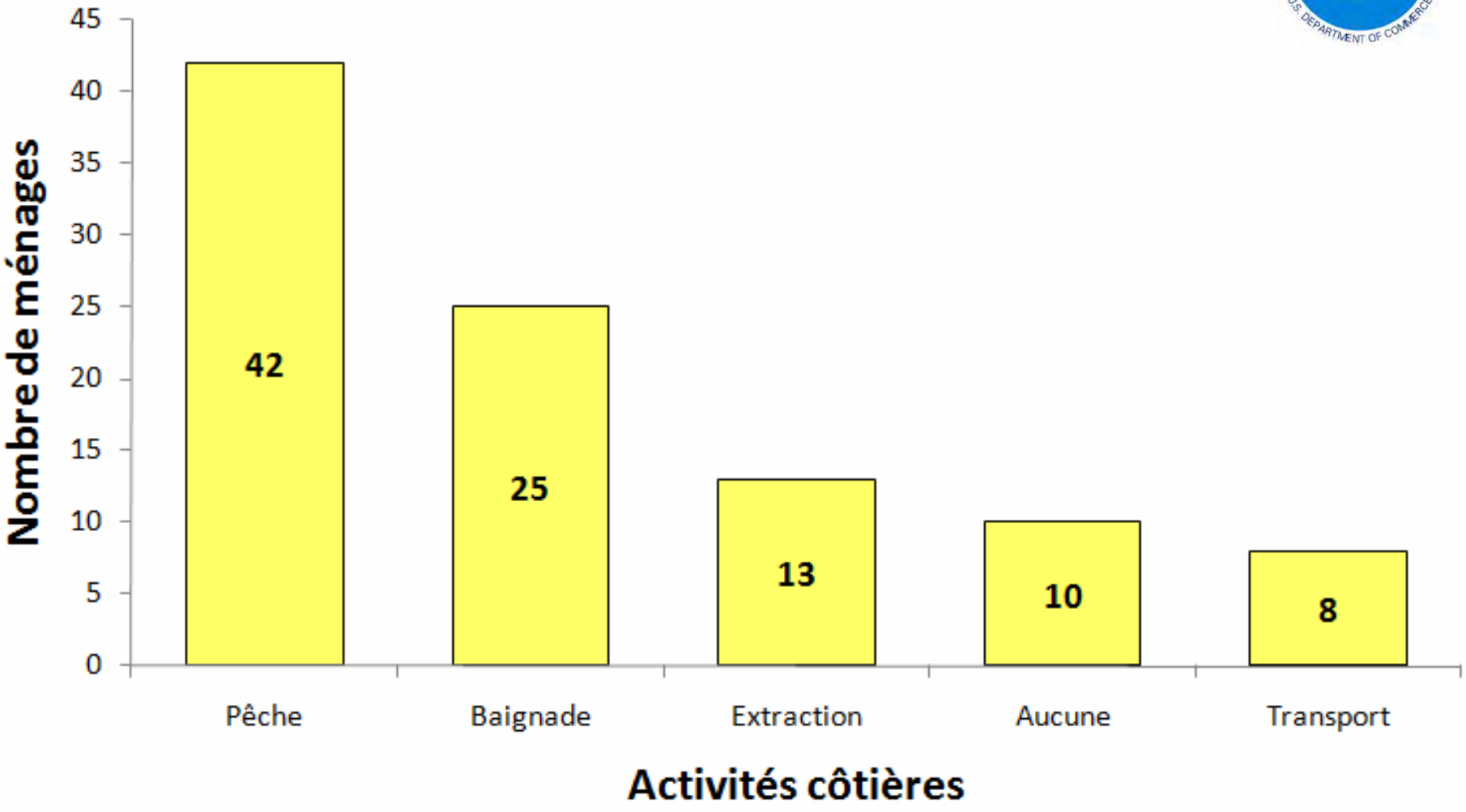
FISHING ACTIVITIES IN ICONI

1. *What kind of fishing activities are practised in Iconi ?*
2. *What methods are used for fishing ?*
3. *For each method – Which species are targeted by the method?*
4. *For each method – What is the impact of the method on the marine environment? And what is the level of impact? (high, average, low) ?*
5. *Which community organizations in Iconi have an influence on the exploitation of marine resources?*

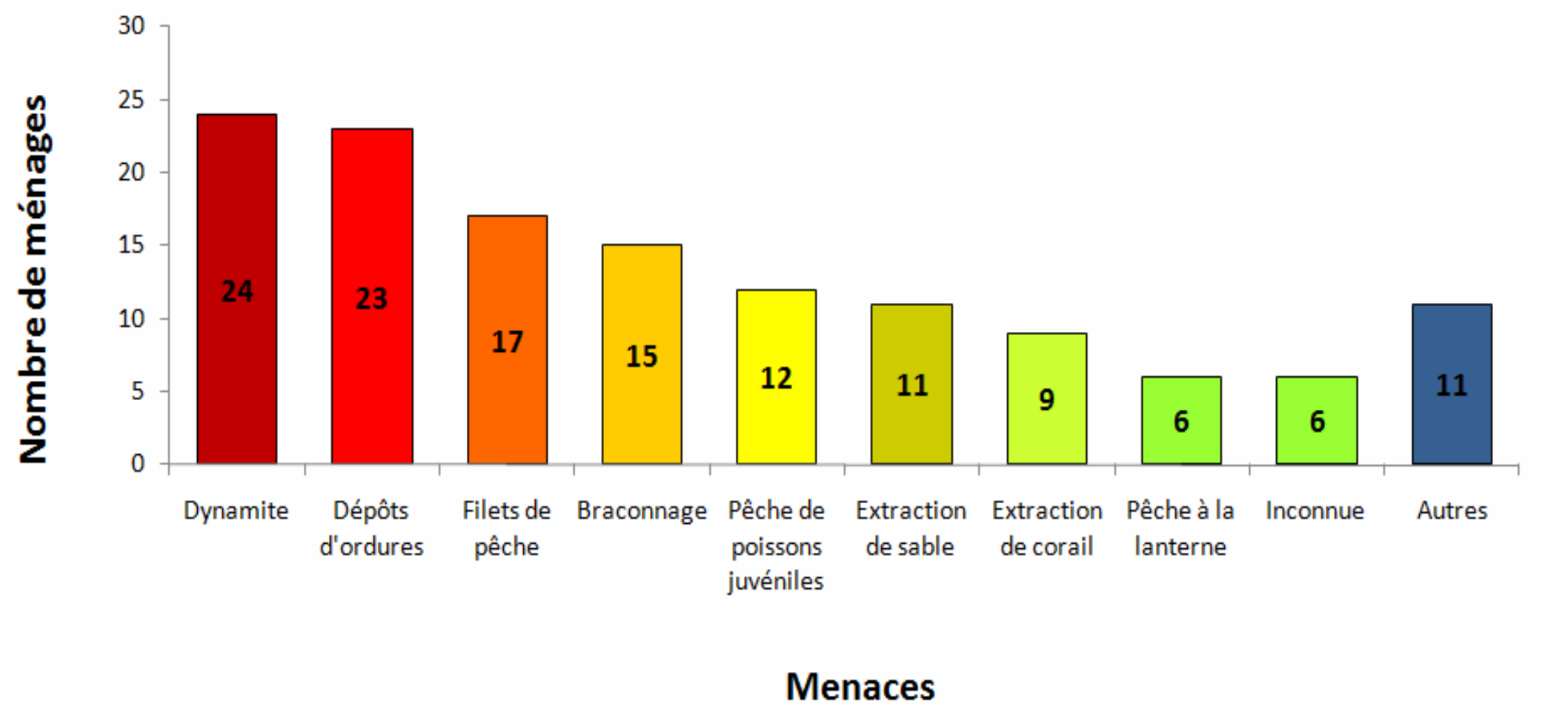
EMPLOIS


Petit commerce 12%
Etudiant 15%
Ouvrier 8%
Sans occupation 5%
Secteur publique 5%
Pêcheur 21%
Autre 2%
Tourisme 1%
Inconnue 1%
Secteur privé 1%
Ménagère 29%

ACTIVITES COTIERES

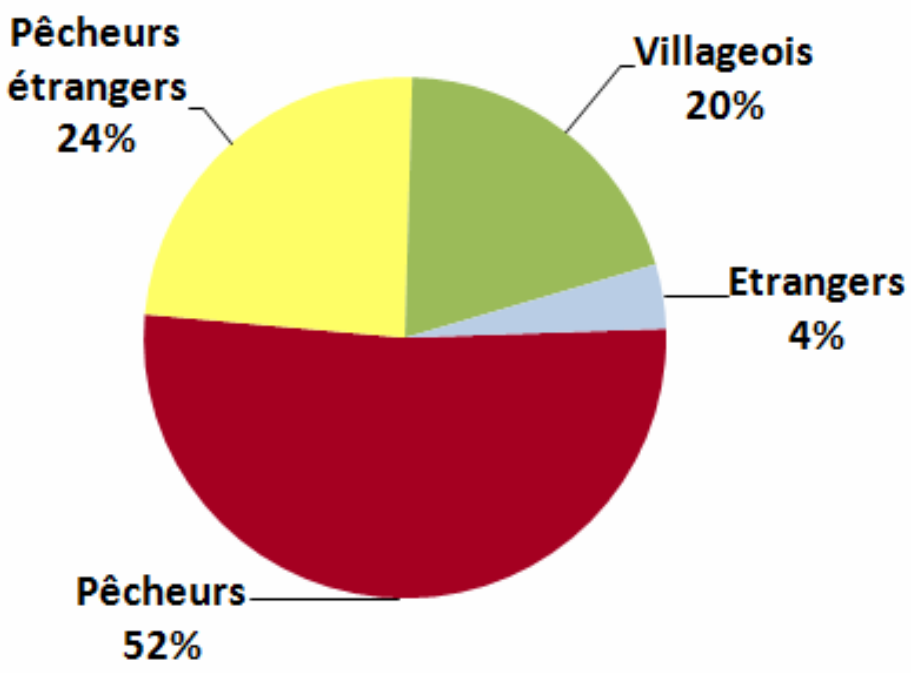


MENACES

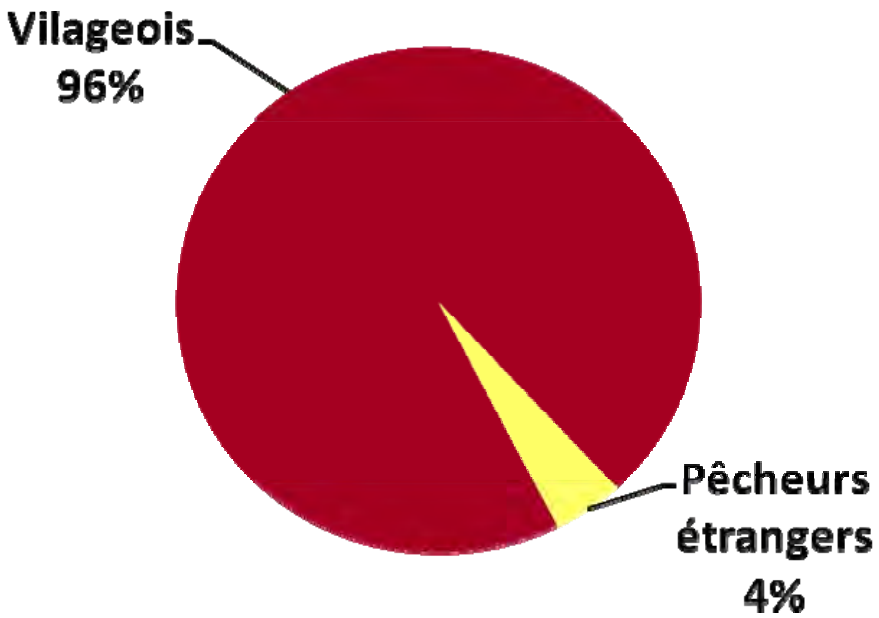

Nombre de ménages
30
25
20
15
10
5
0
24
23
17
15
12
11
9
6
6
11
Dynamite
Dépôts d'ordures
Filets de pêche
Braconnage
Pêche de poissons juvéniles
Extraction de sable
Extraction de corail
Pêche à la lanterne
Inconnue
Autres
Menaces

RESPONSABLES

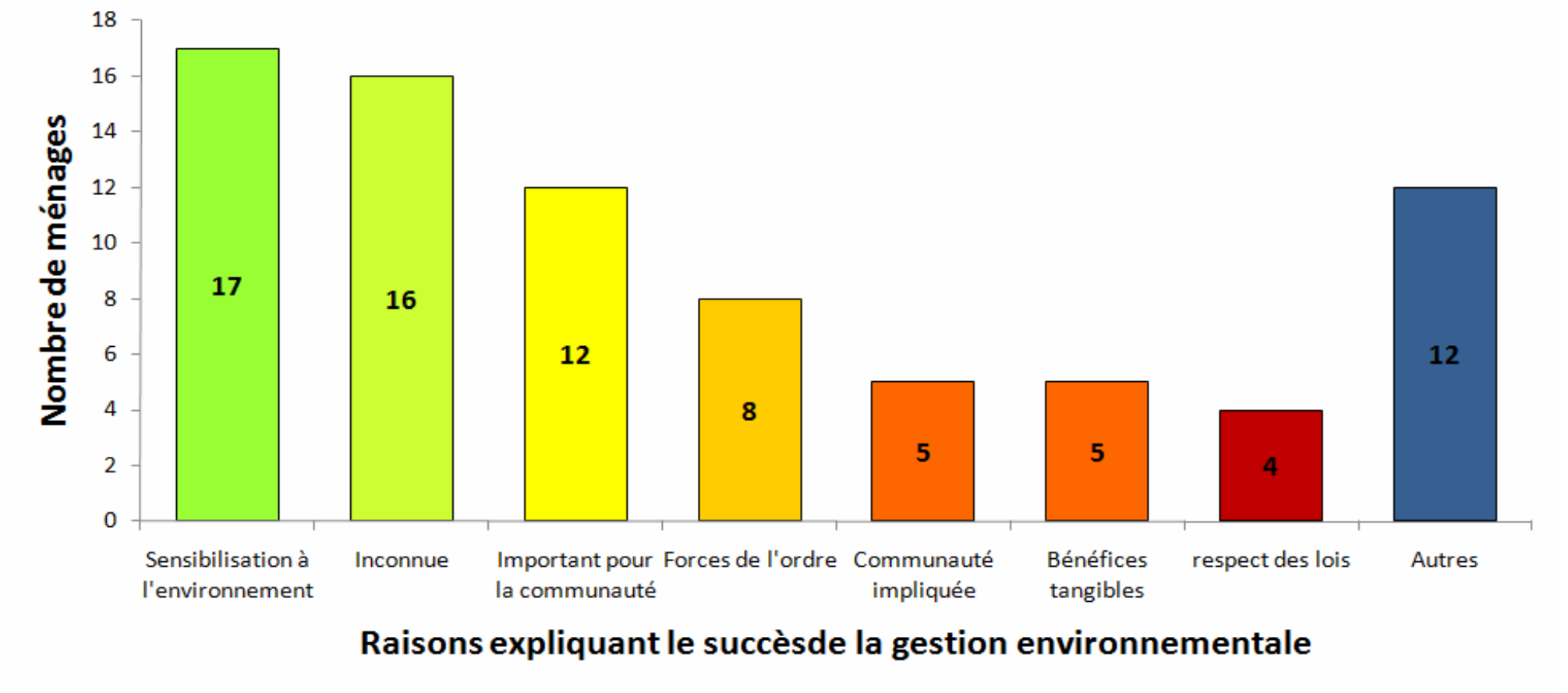
Dynamite



Dépôt d'ordures

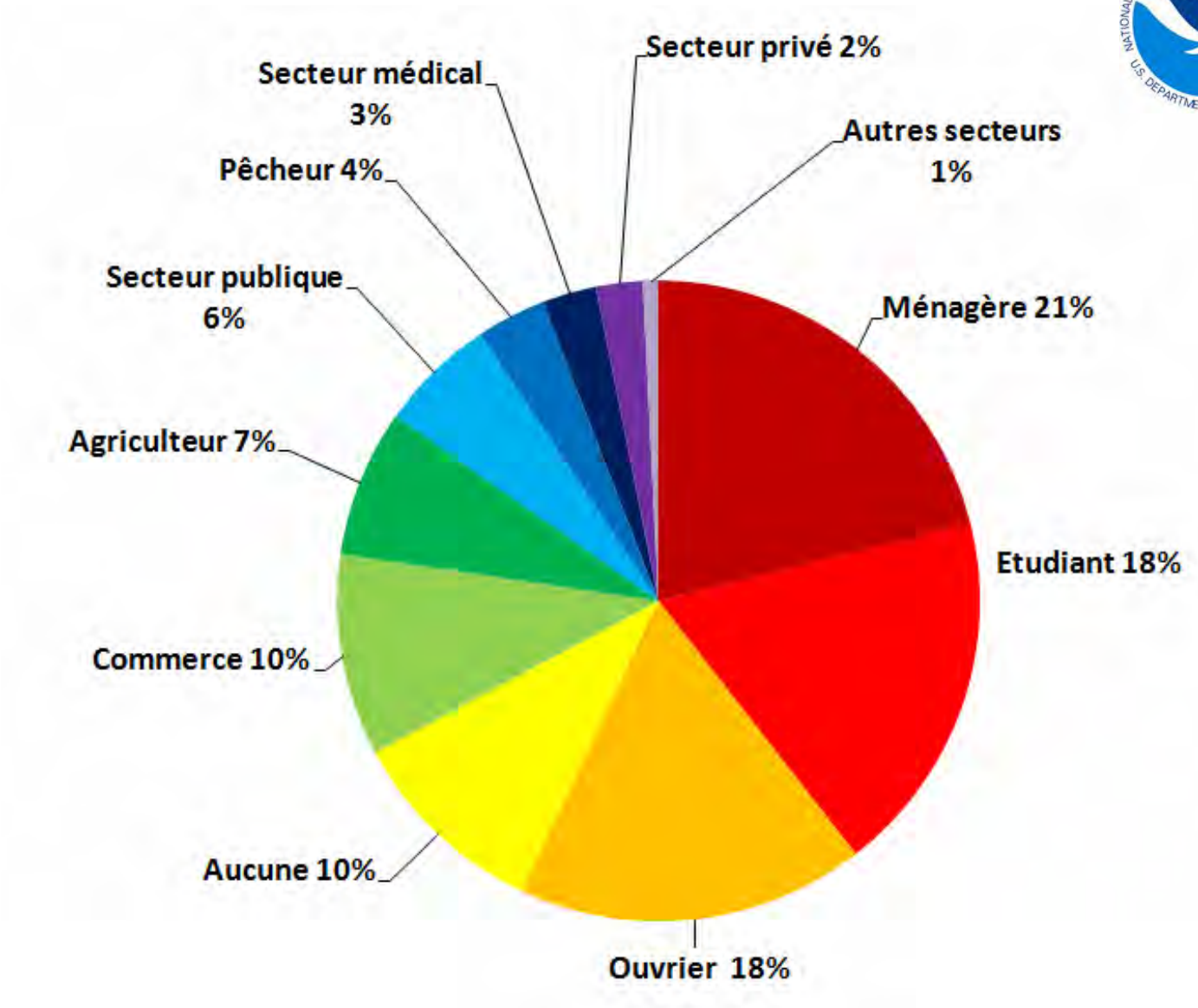


SUCCES DE LA GESTION ENVIRONNEMENTALE



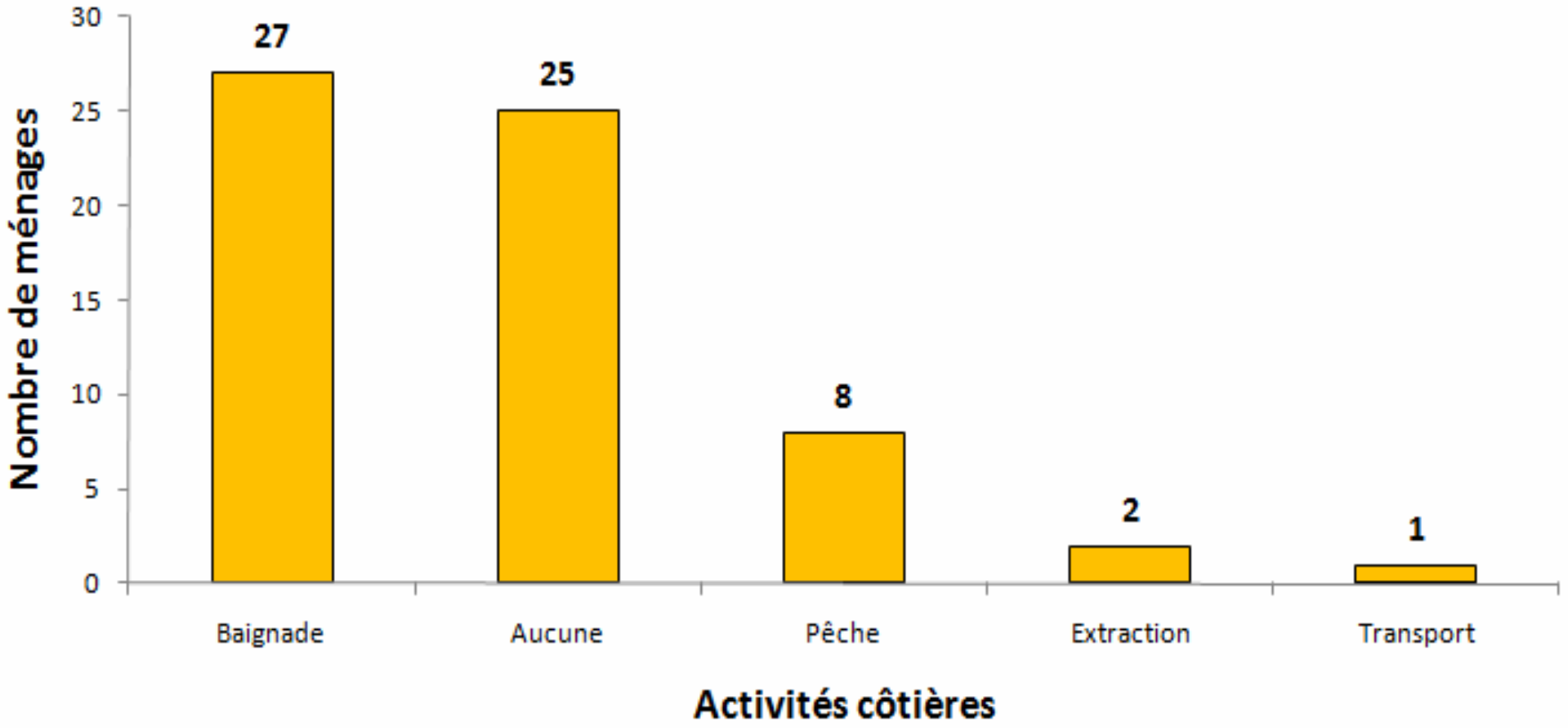
Foumboni

EMPLOIS



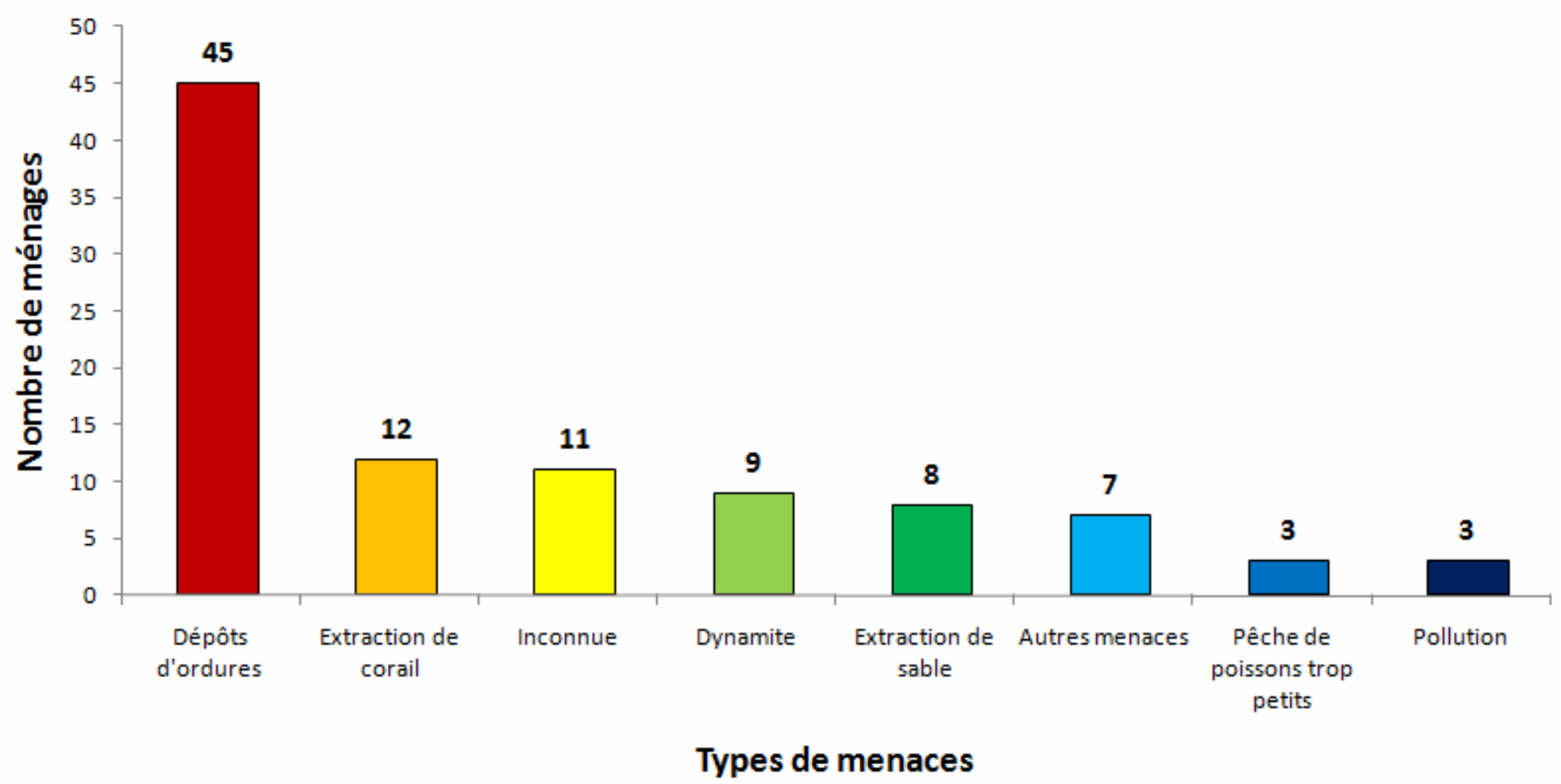
Foumboni

ACTIVITES COTIERES



Foumboni

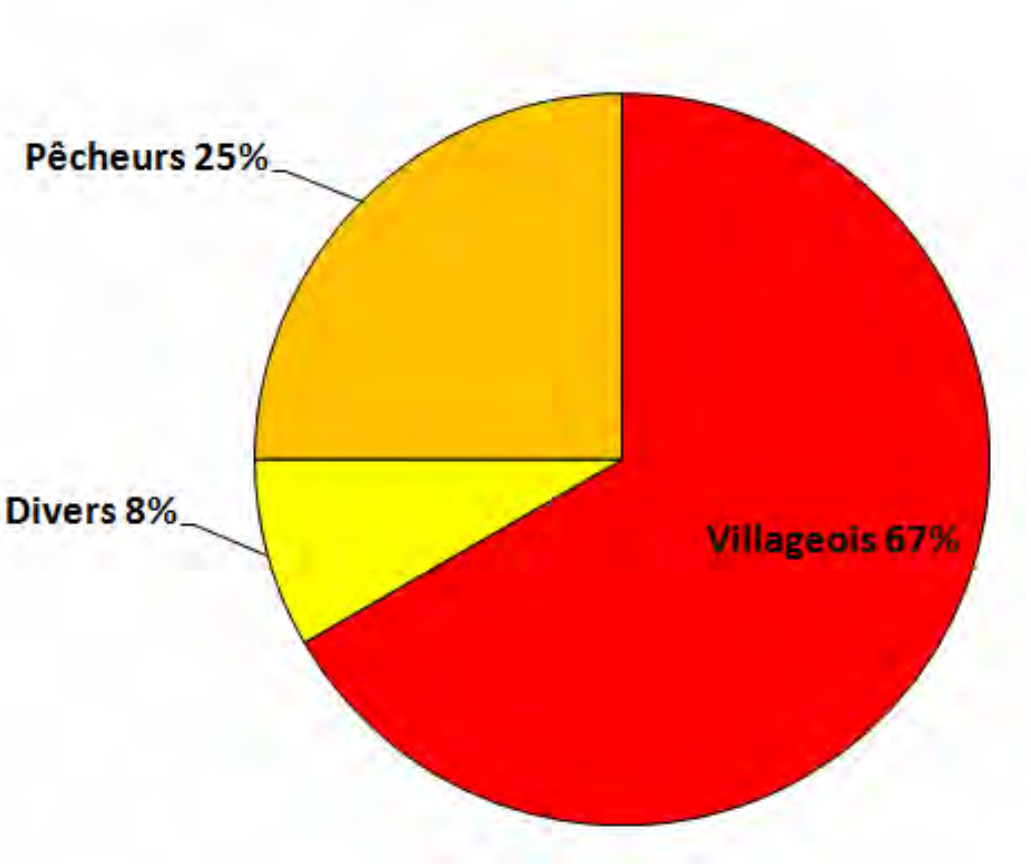
MENACES



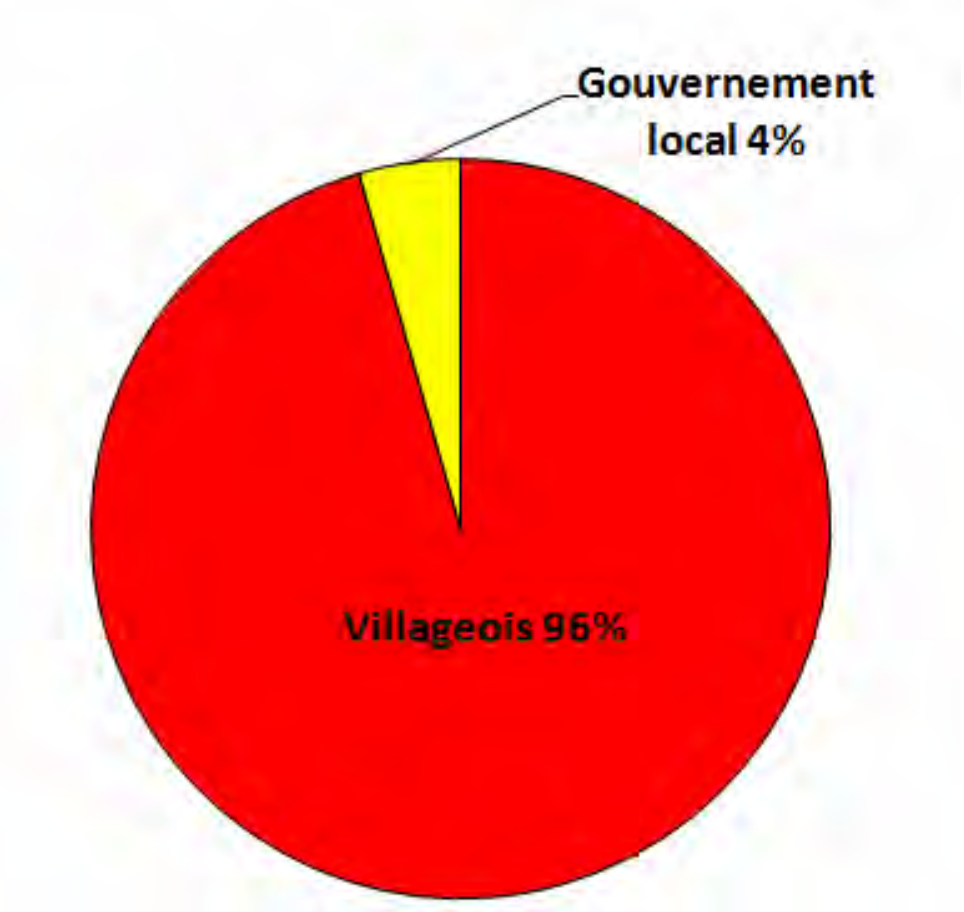
Foumboni

RESPONSABLES

Extraction de corail

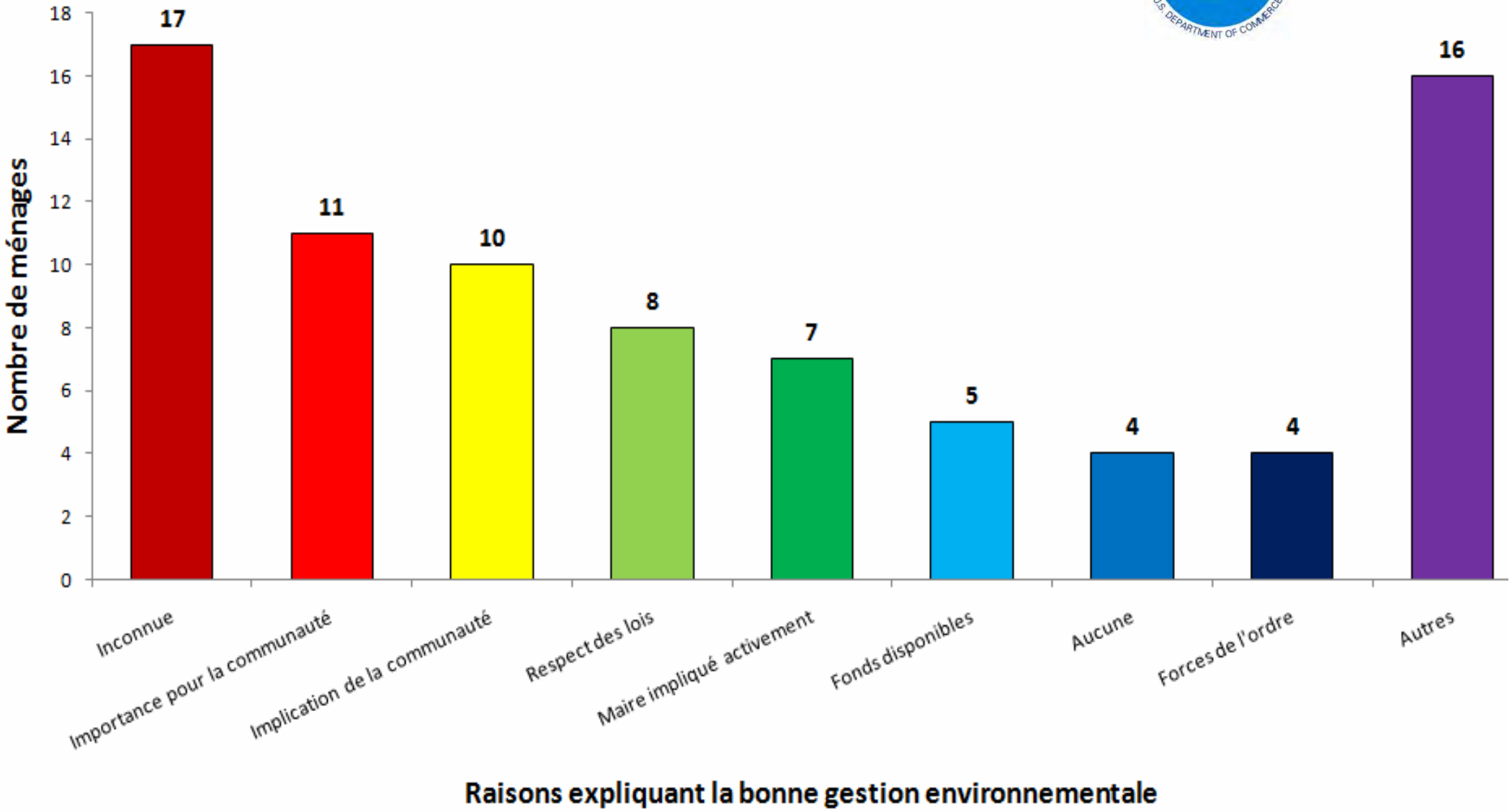


Dépôt d'ordures

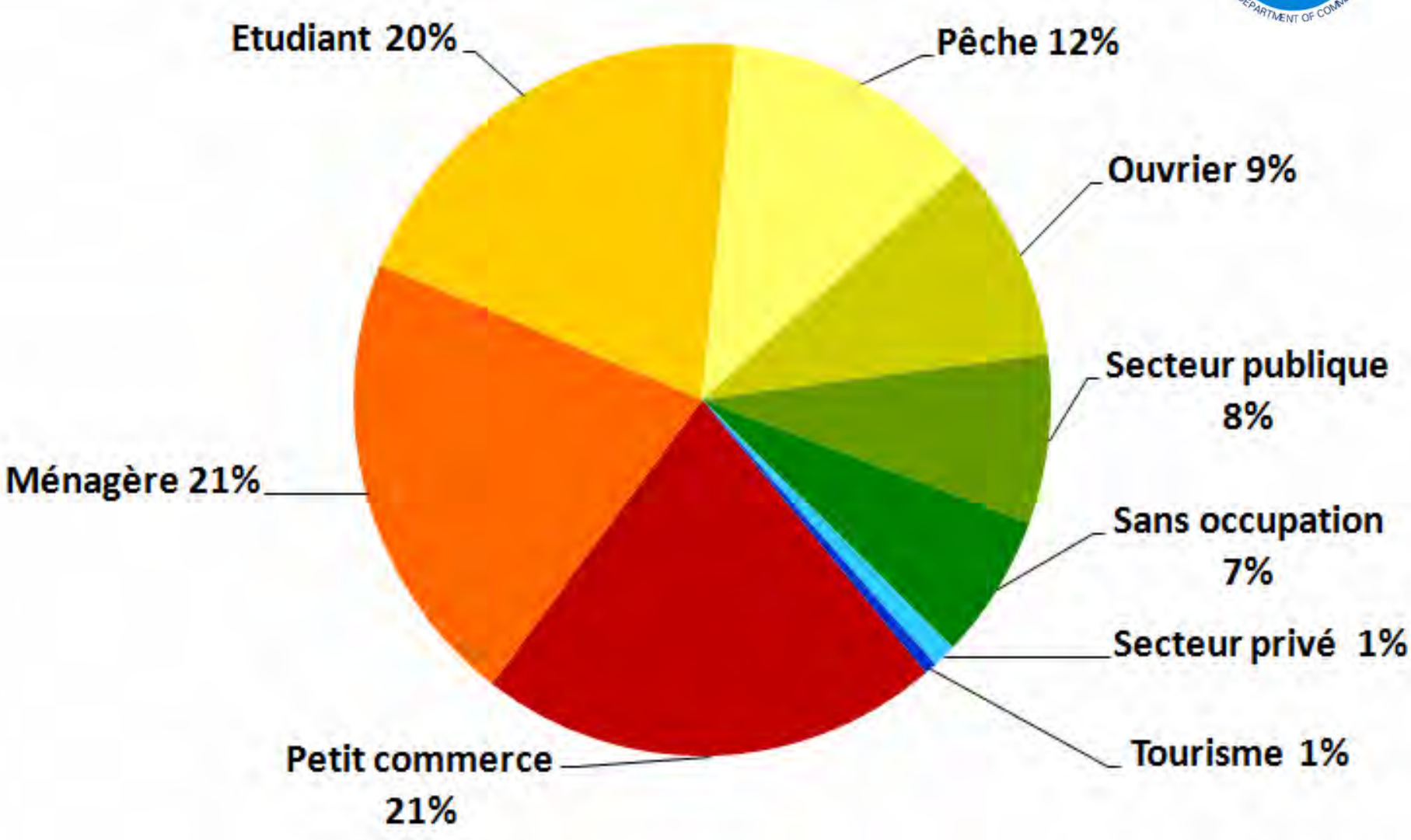


Foumboni

SUCCES DE LA GESTION ENVIRONNEMENTALE

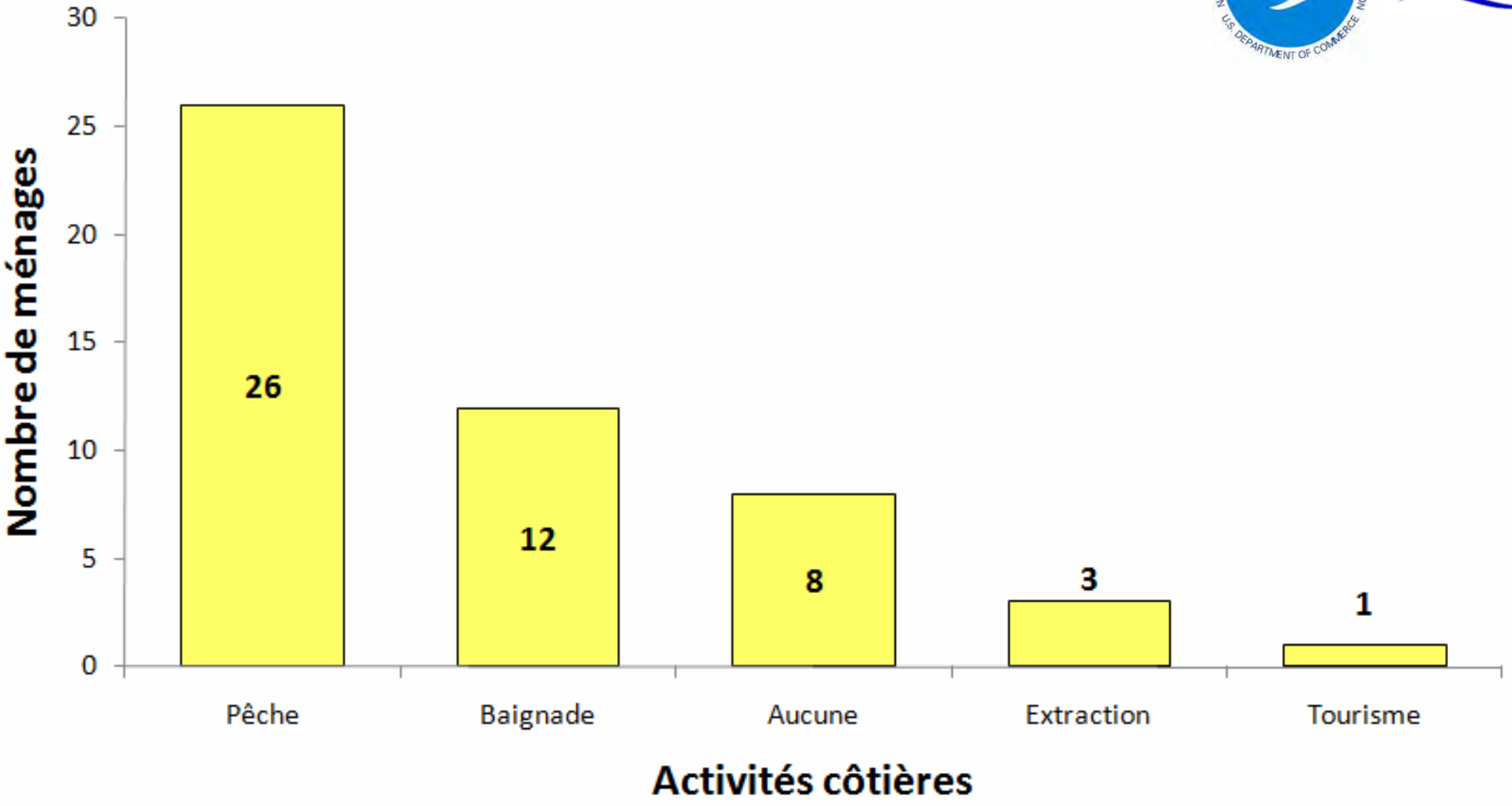


EMPLOIS


Etudiant 20%
Pêche 12%
Ouvrier 9%
Secteur publique 8%
Sans occupation 7%
Secteur privé 1%
Tourisme 1%
Petit commerce 21%
Ménagère 21%

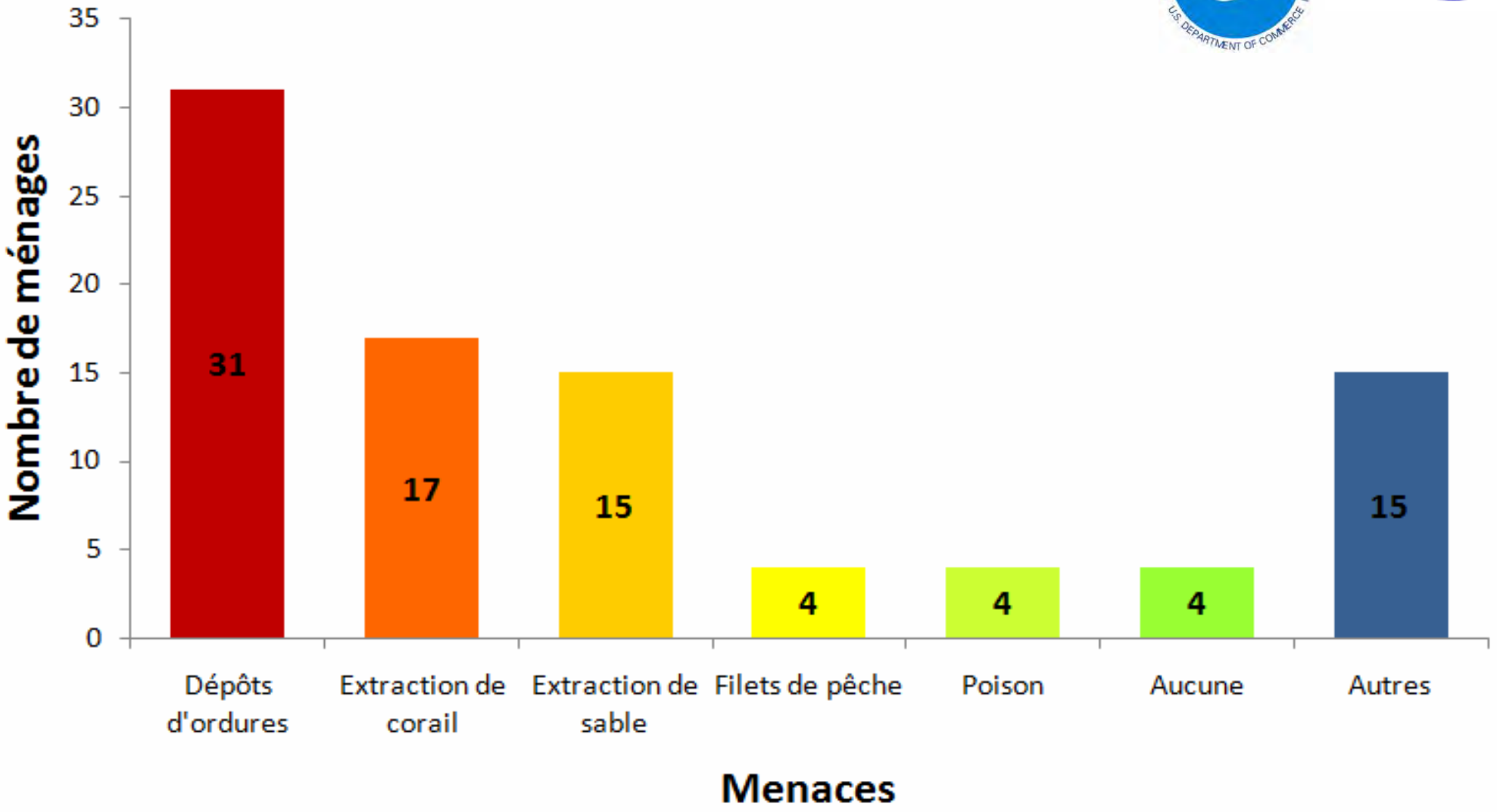
HATSAMBOU

ACTIVITES COTIERES



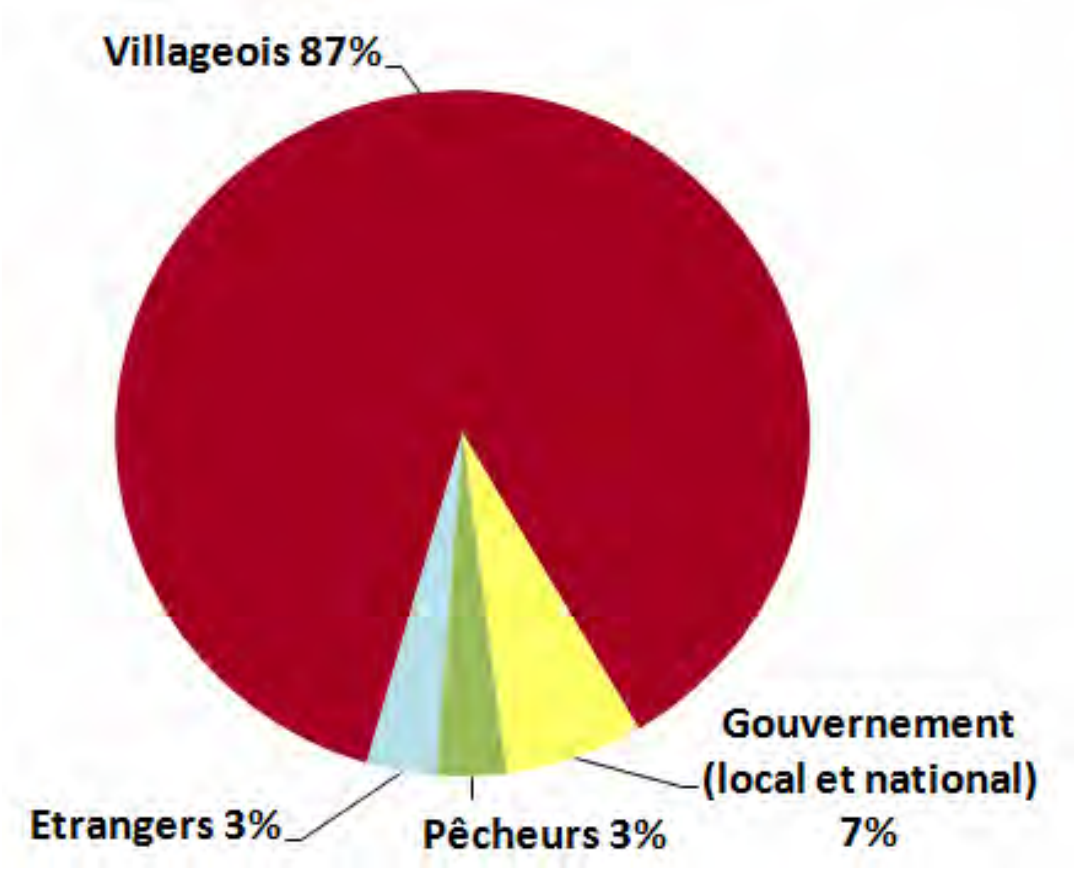
HATSAMBOU

MENACES

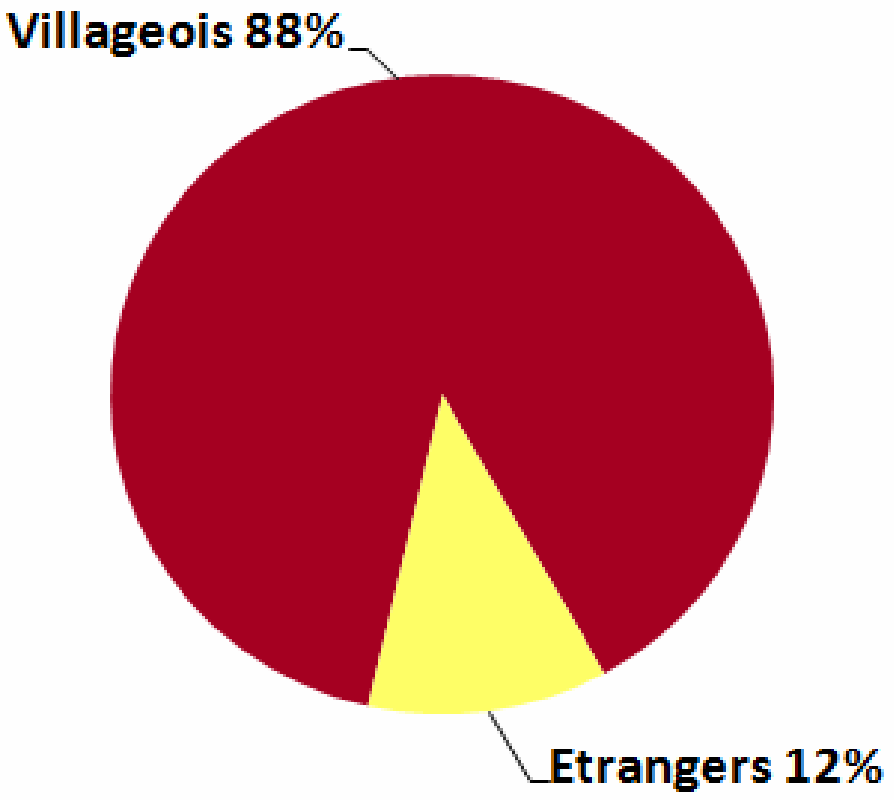


RESPONSABLES

Dépôts d'ordures

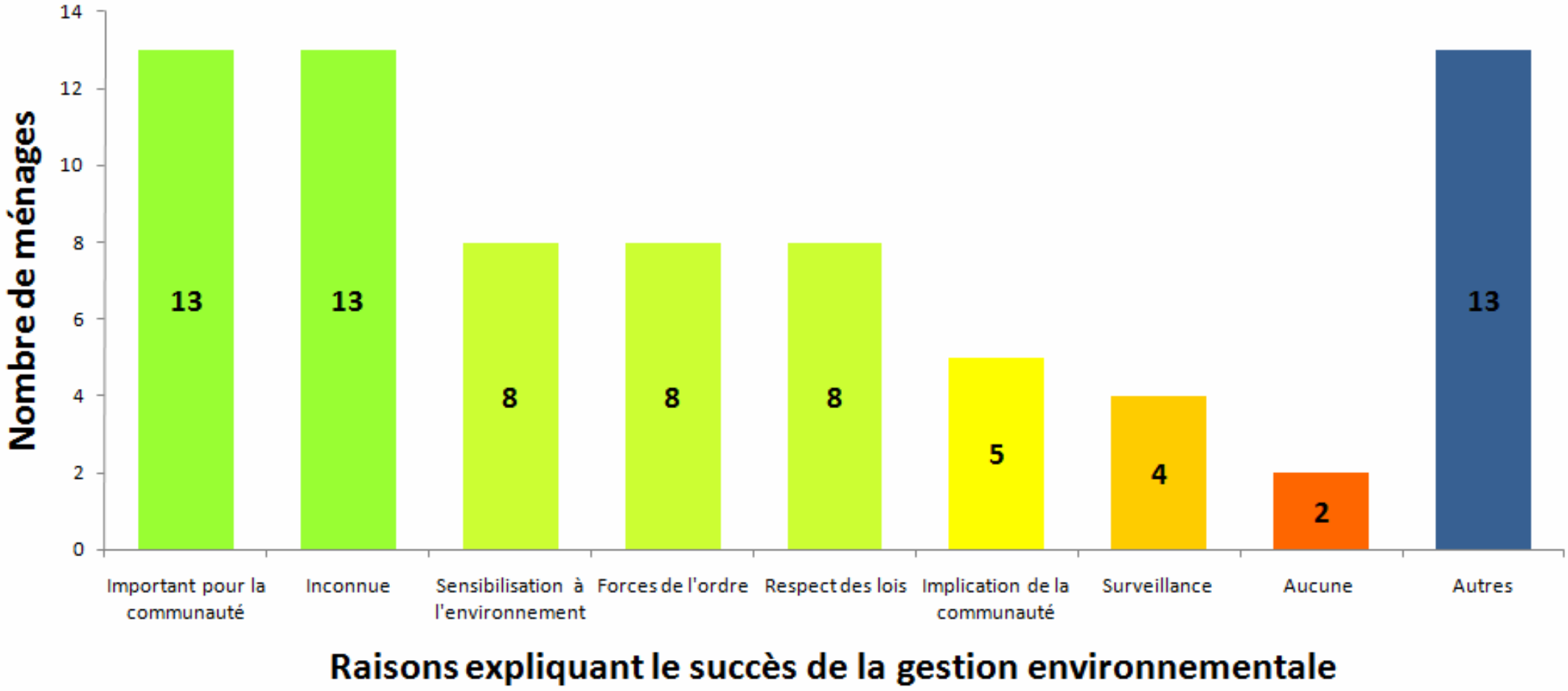


Extraction de corail

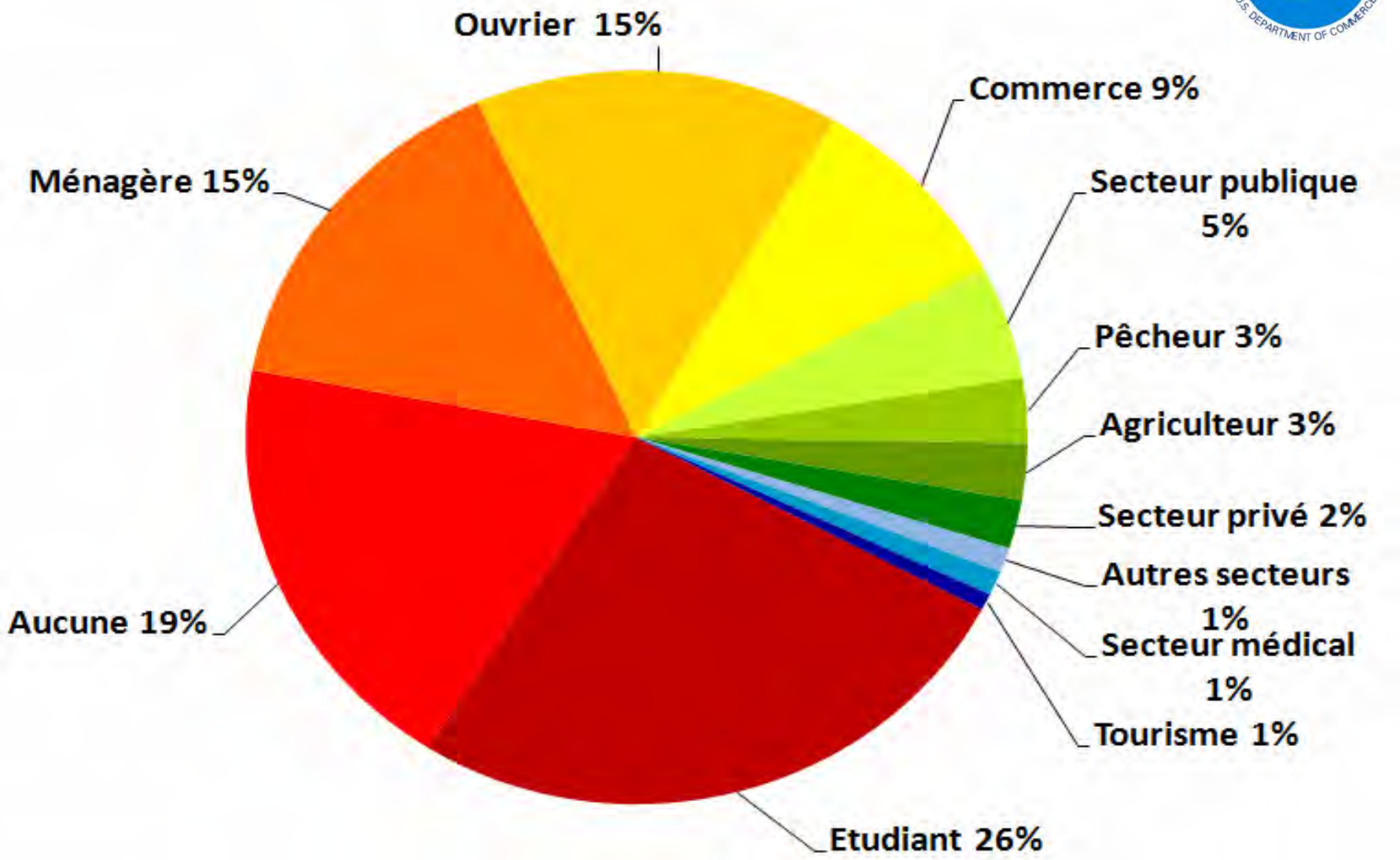


HATSAMBOU

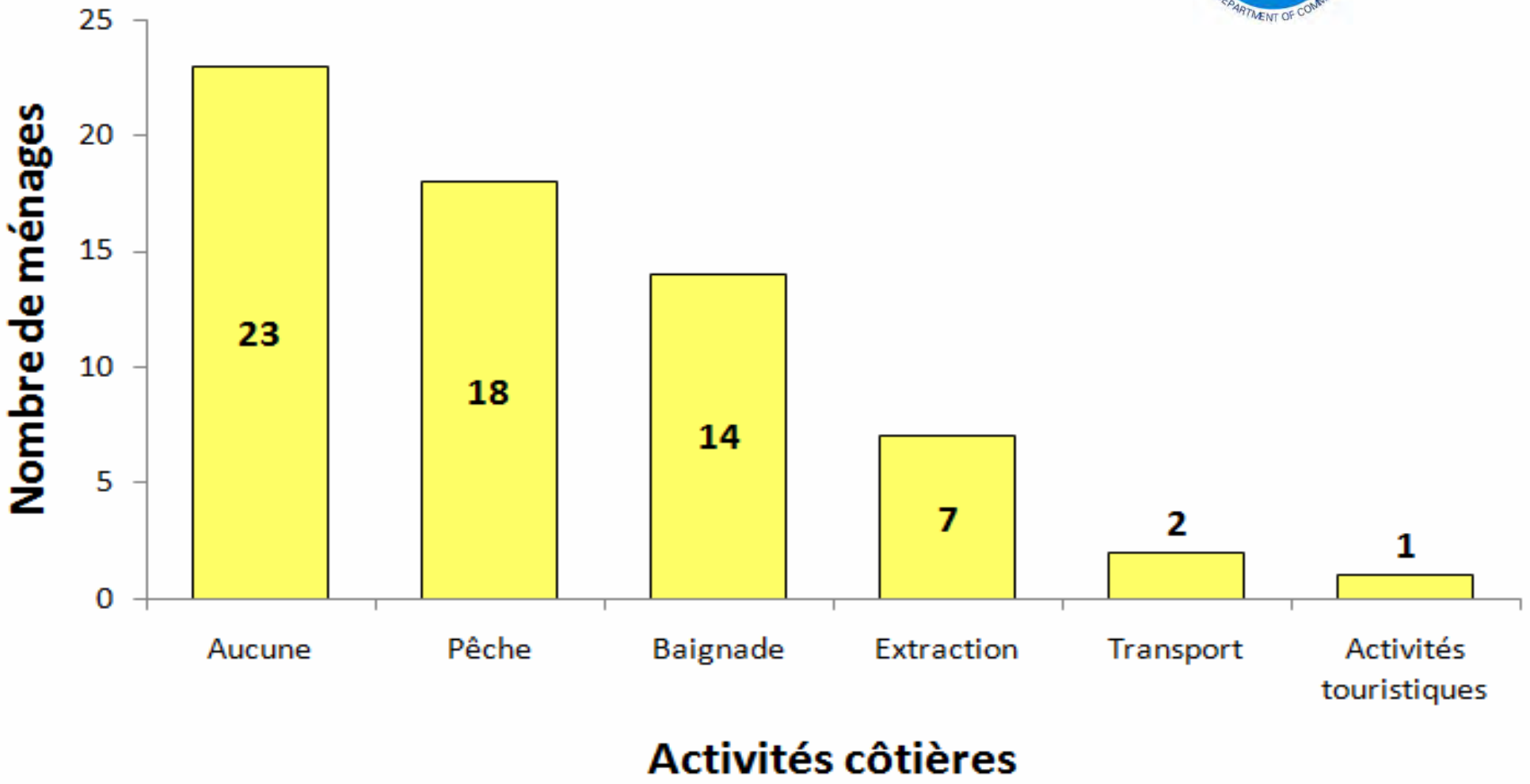
SUCCES DE LA GESTION ENVIRONNEMENTALE



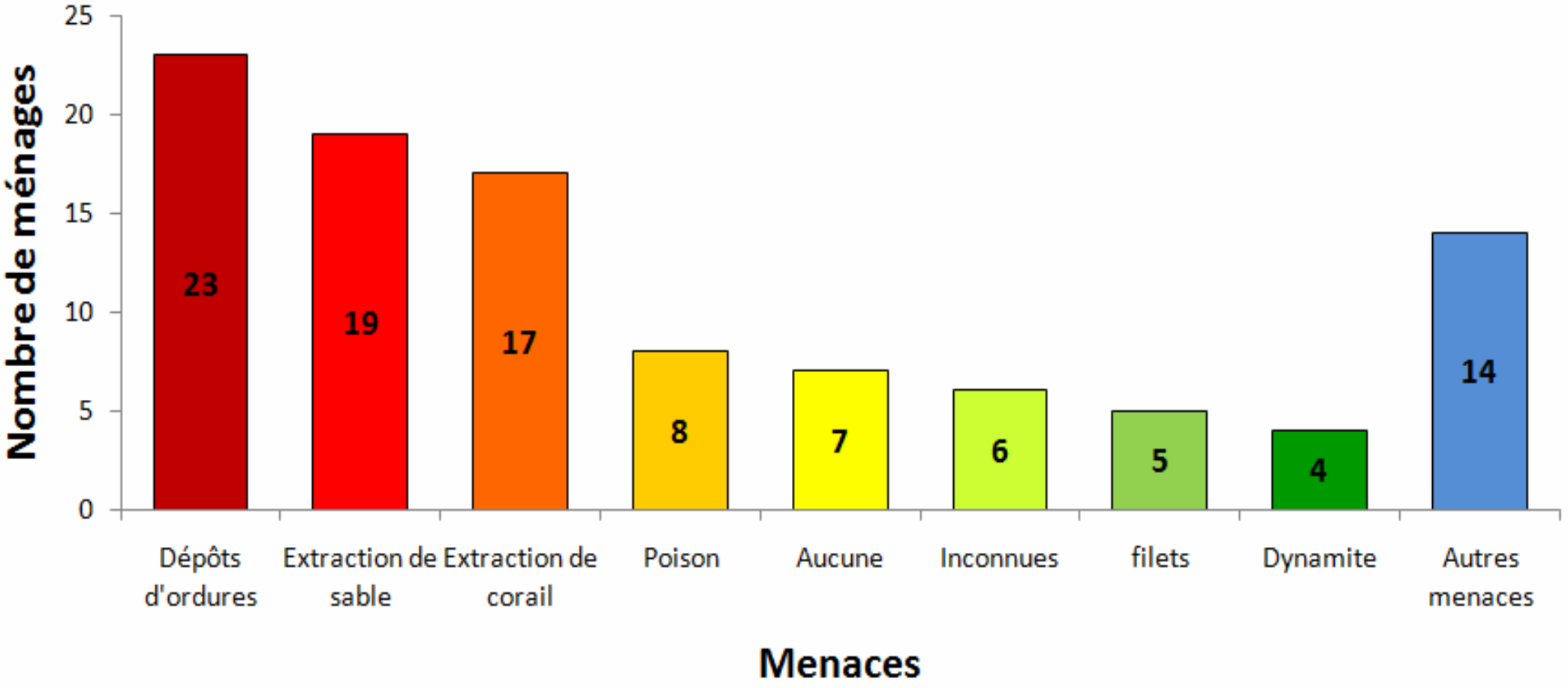
EMPLOIS


Ouvrier 15%
Commerce 9%
Ménagère 15%
Secteur publique 5%
Pêcheur 3%
Agriculteur 3%
Secteur privé 2%
Autres secteurs 1%
Aucune 19%
Secteur médical 1%
Tourisme 1%
Etudiant 26%

ACTIVITES COTIERES

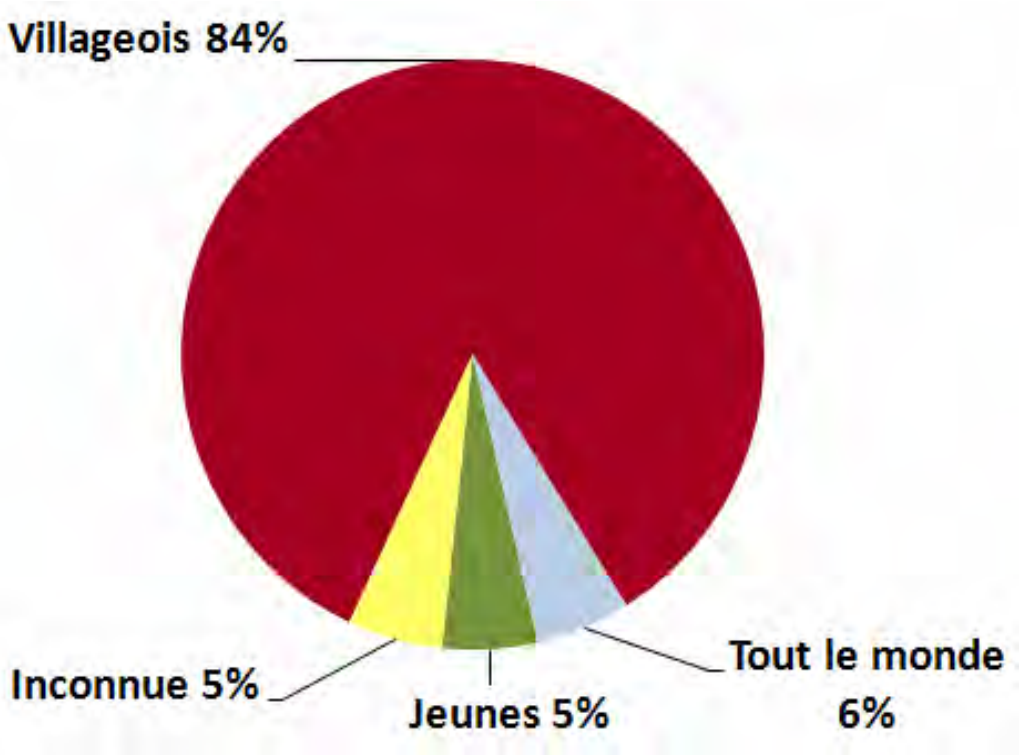


MENACES

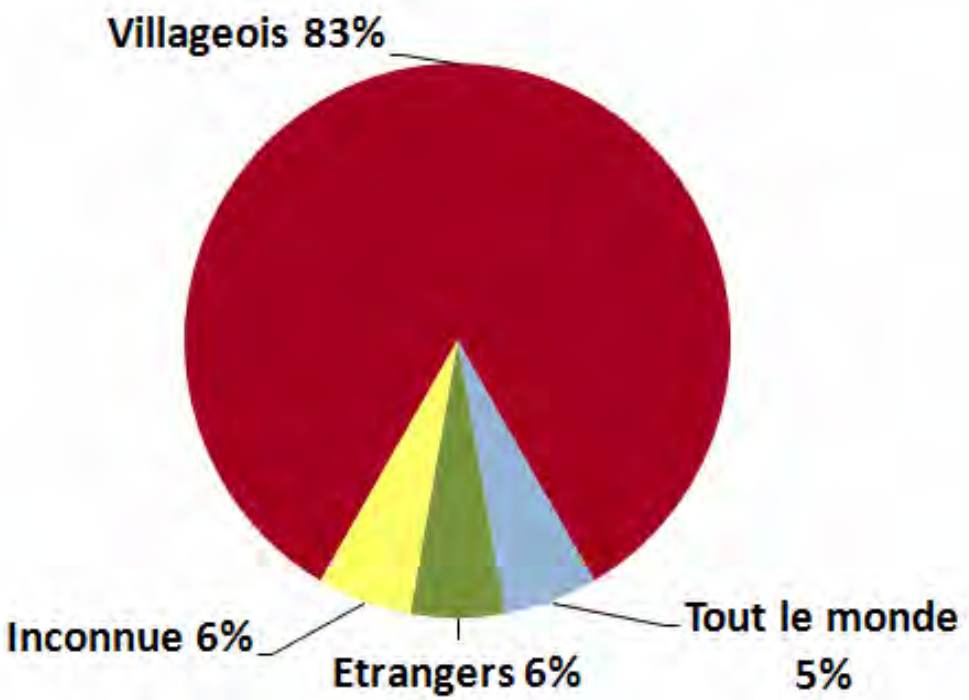

Nombre de ménages
25
20
15
10
5
0
23
19
17
8
7
6
5
4
14
Dépôts d'ordures
Extraction de sable
Extraction de corail
Poison
Aucune
Inconnues
filets
Dynamite
Autres menaces
Menaces

RESPONSABLES

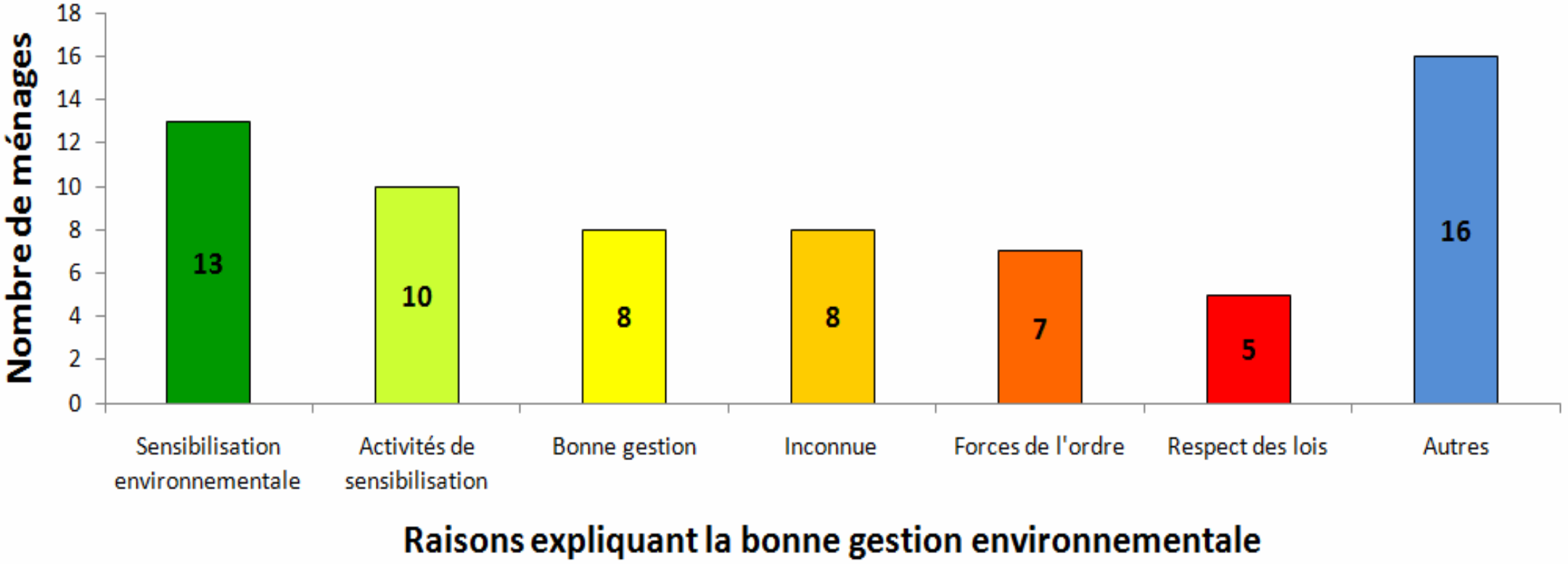
Extraction de sable



Extraction de corail

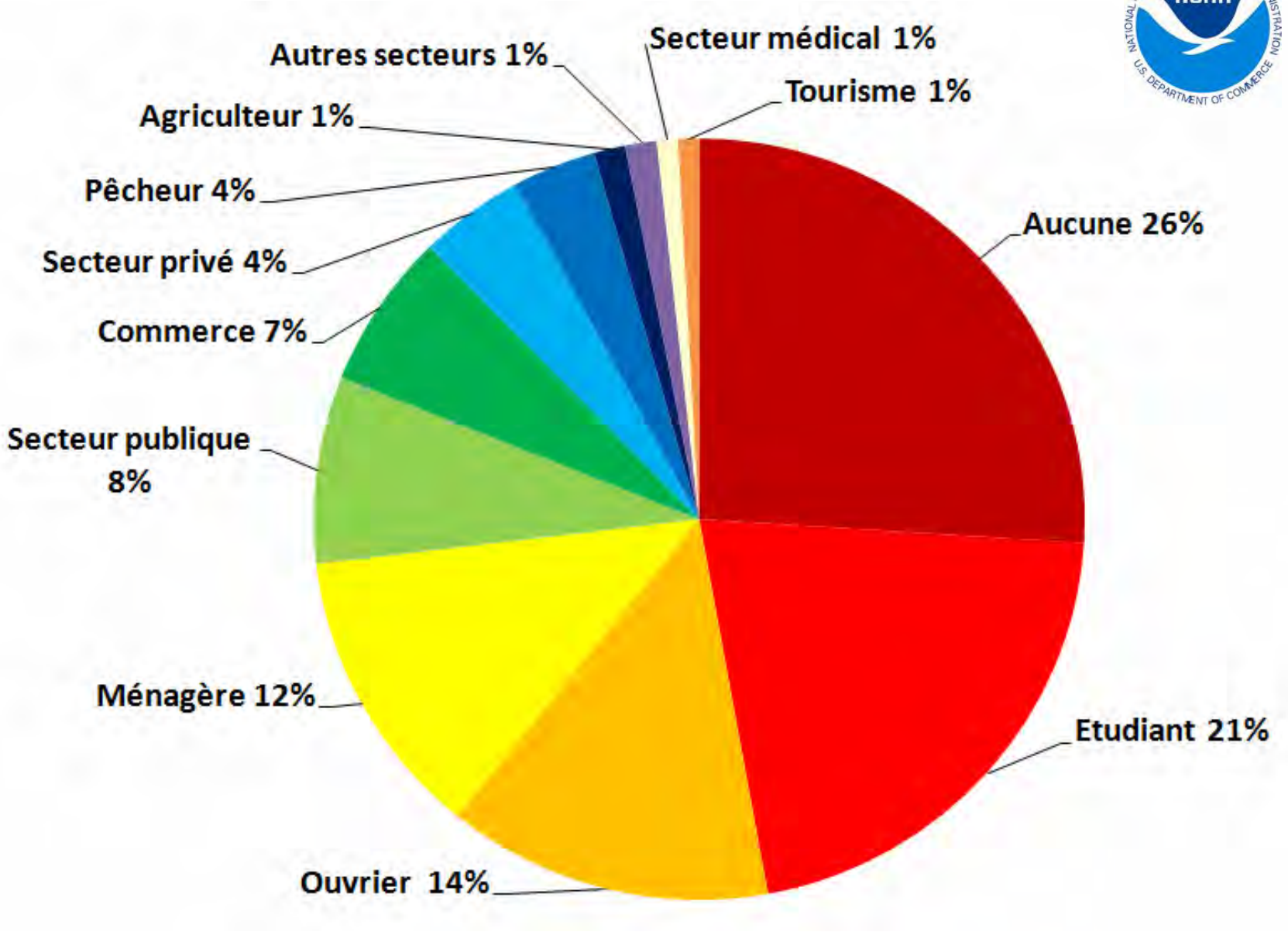


SUCCES DE LA GESTION ENVIRONNEMENTALE



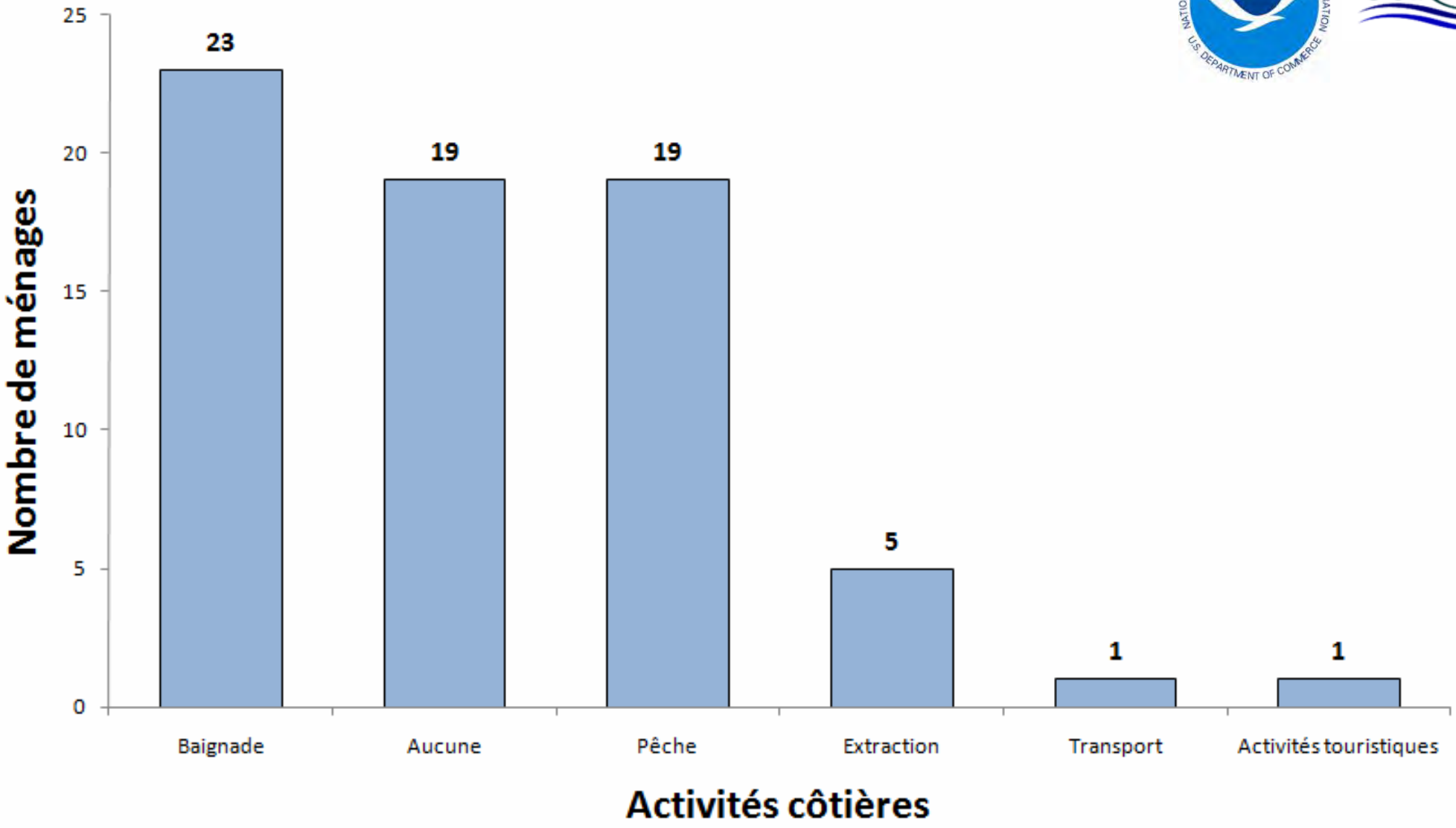
Mitsamiouli

EMPLOIS



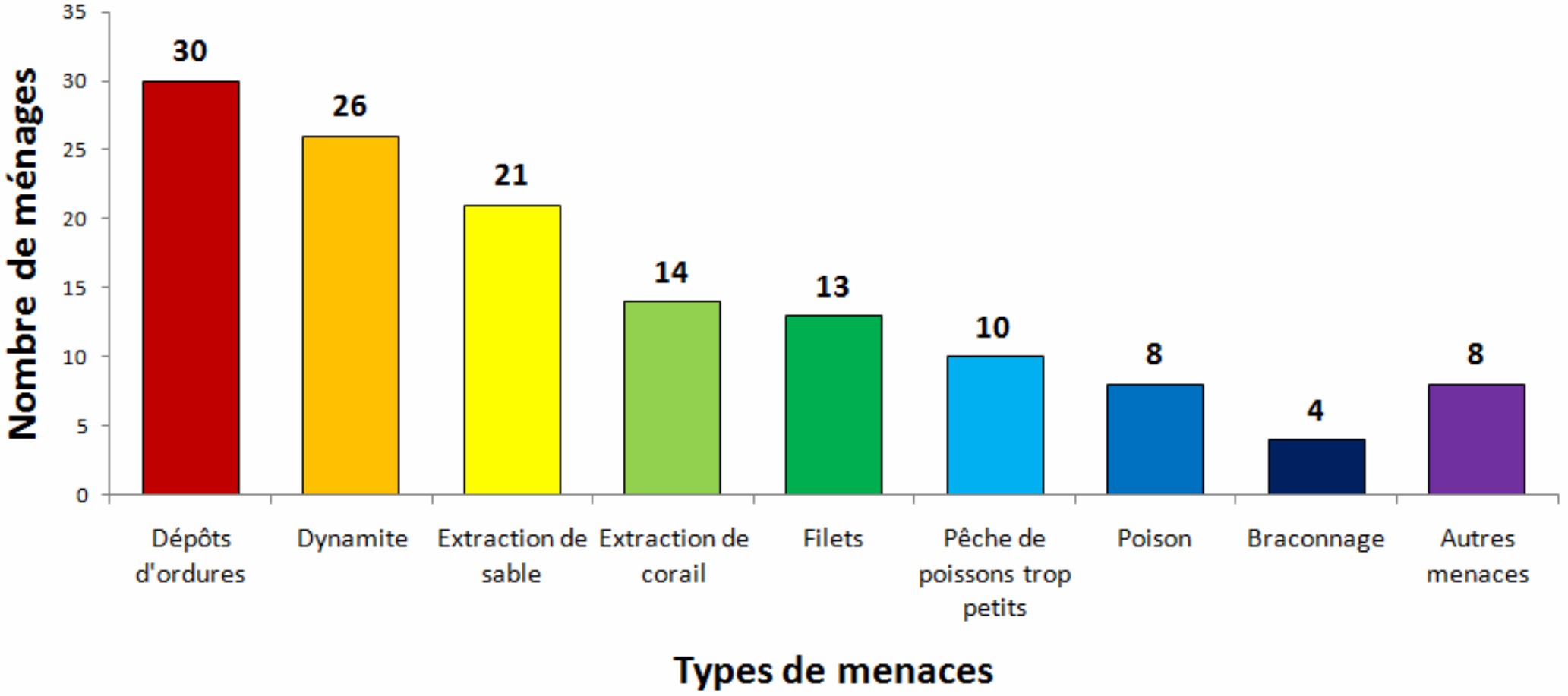
Mitsamiouli

ACTIVITES COTIERES



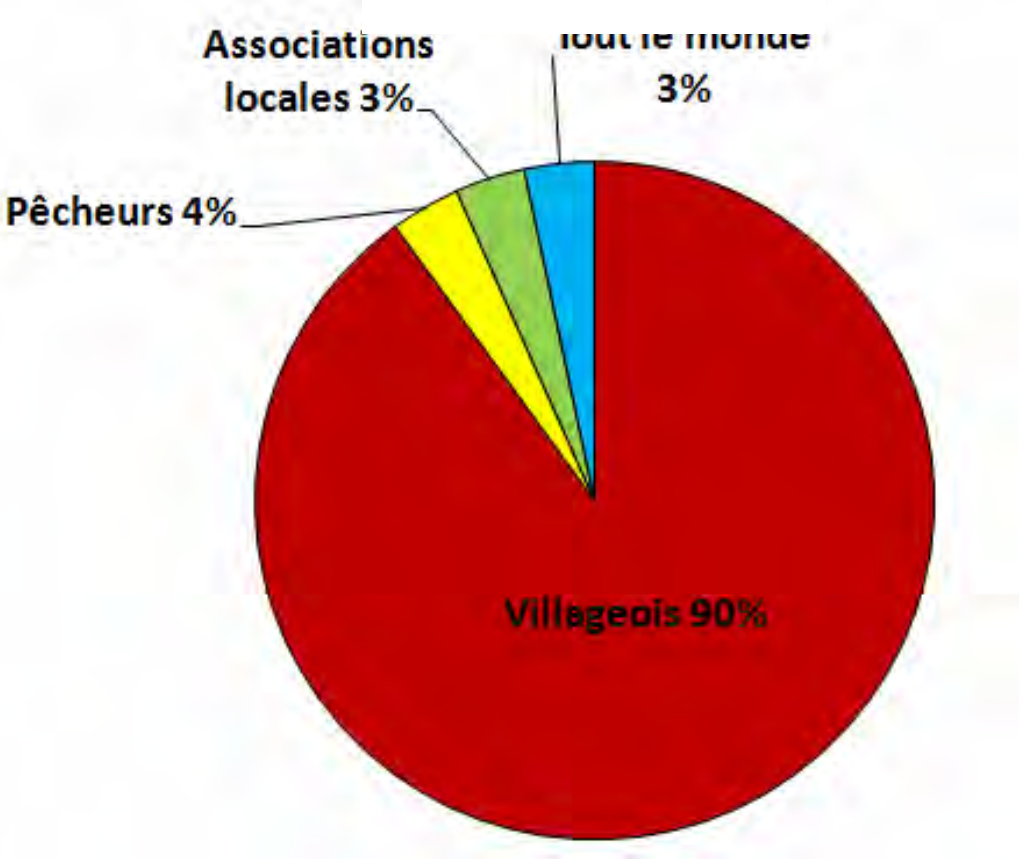
Mitsamiouli

MENACES

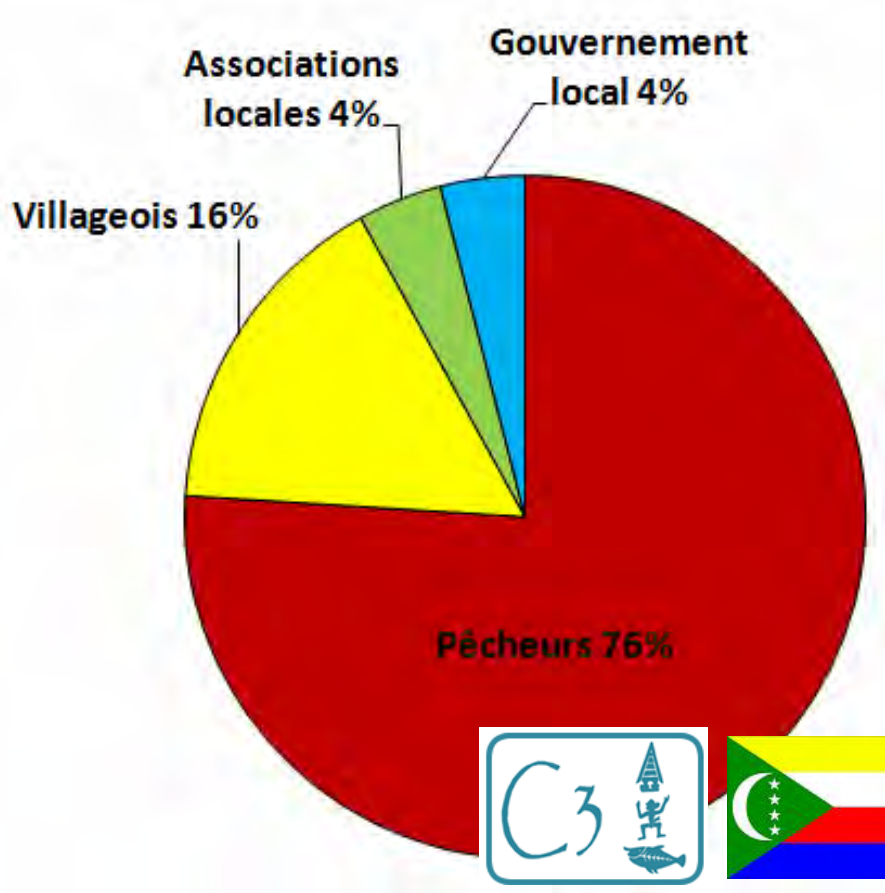


RESPONSABLES

Dépôt d'ordures

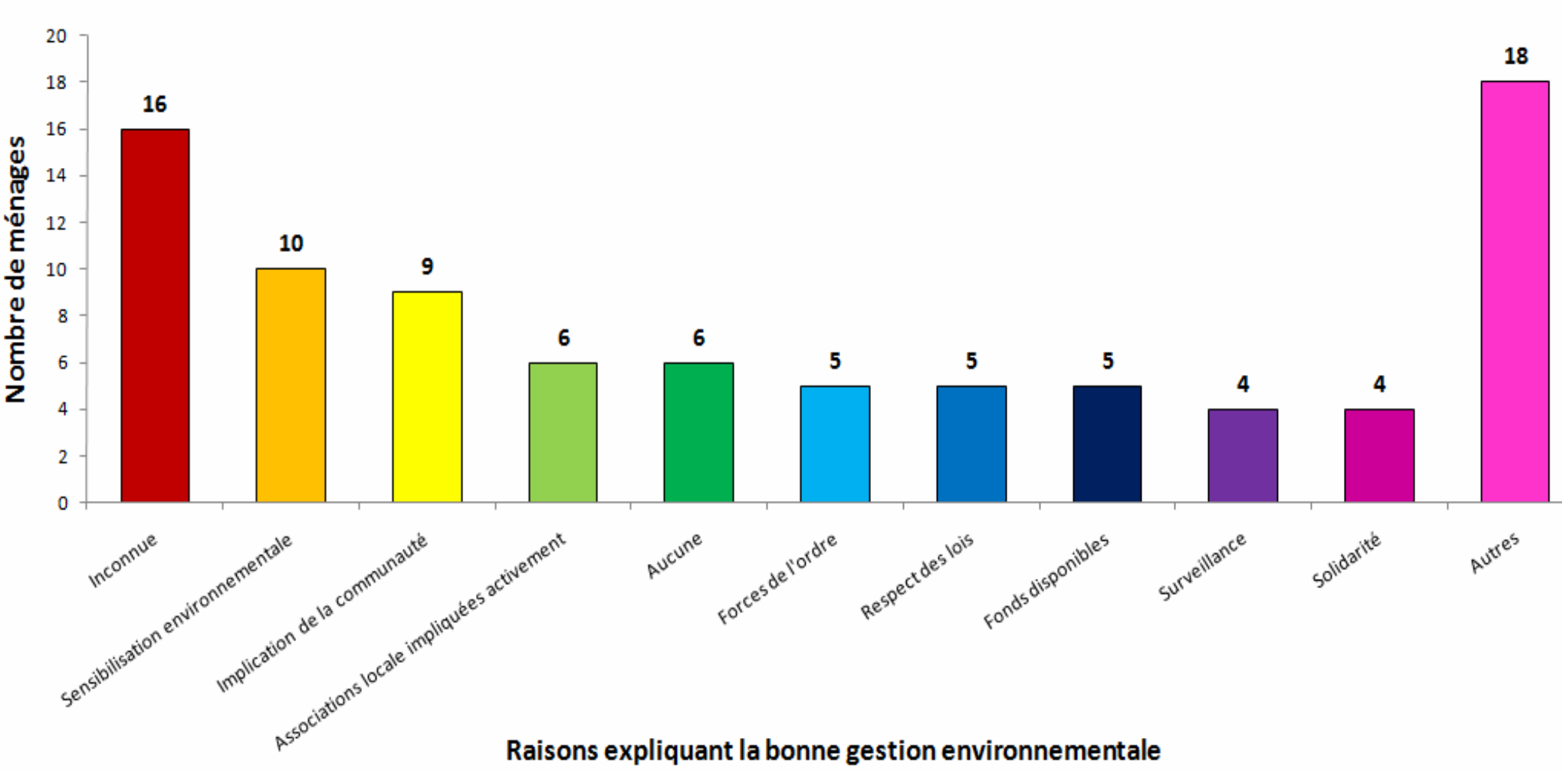


Dynamite

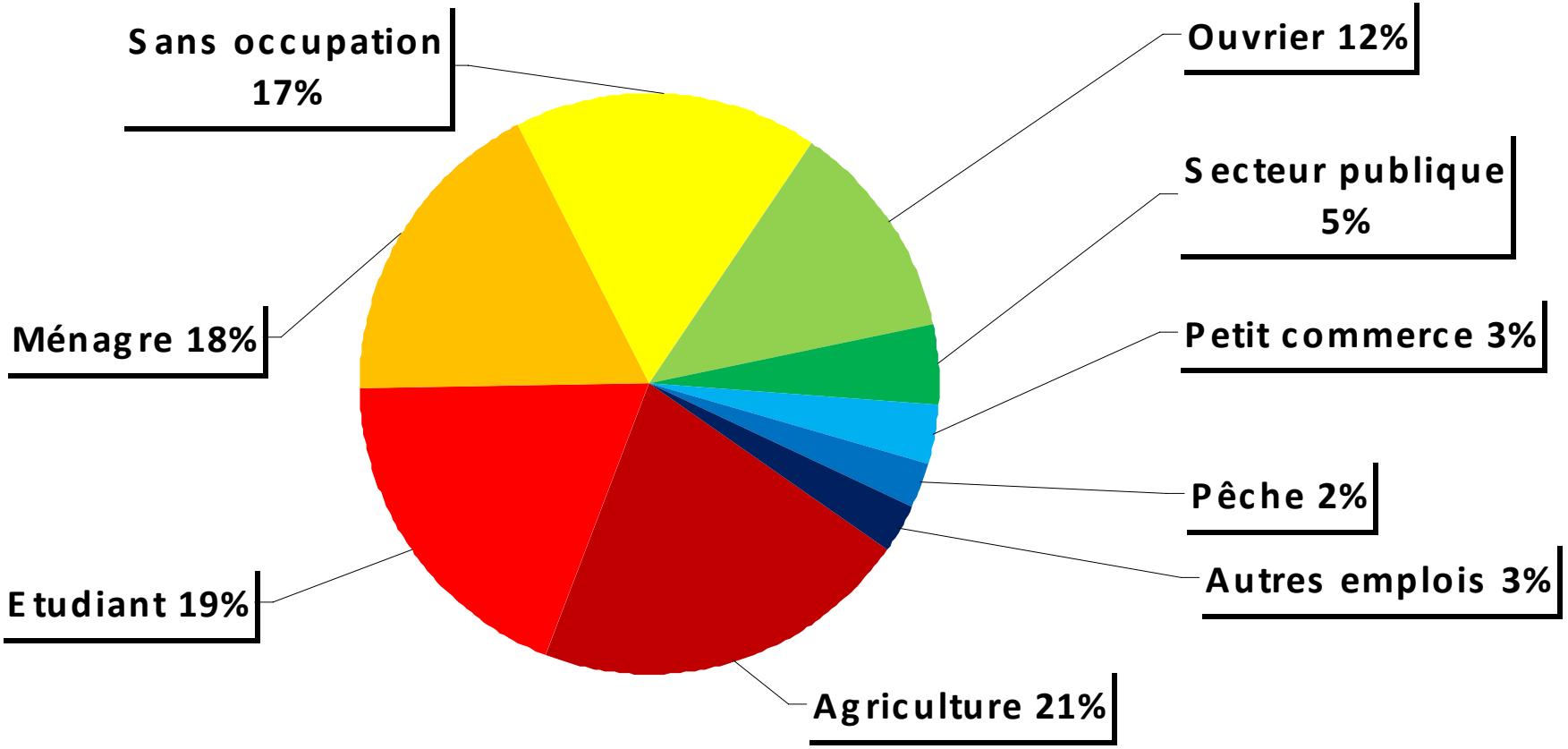


SUCCES DE LA GESTION ENVIRONNEMENTALE

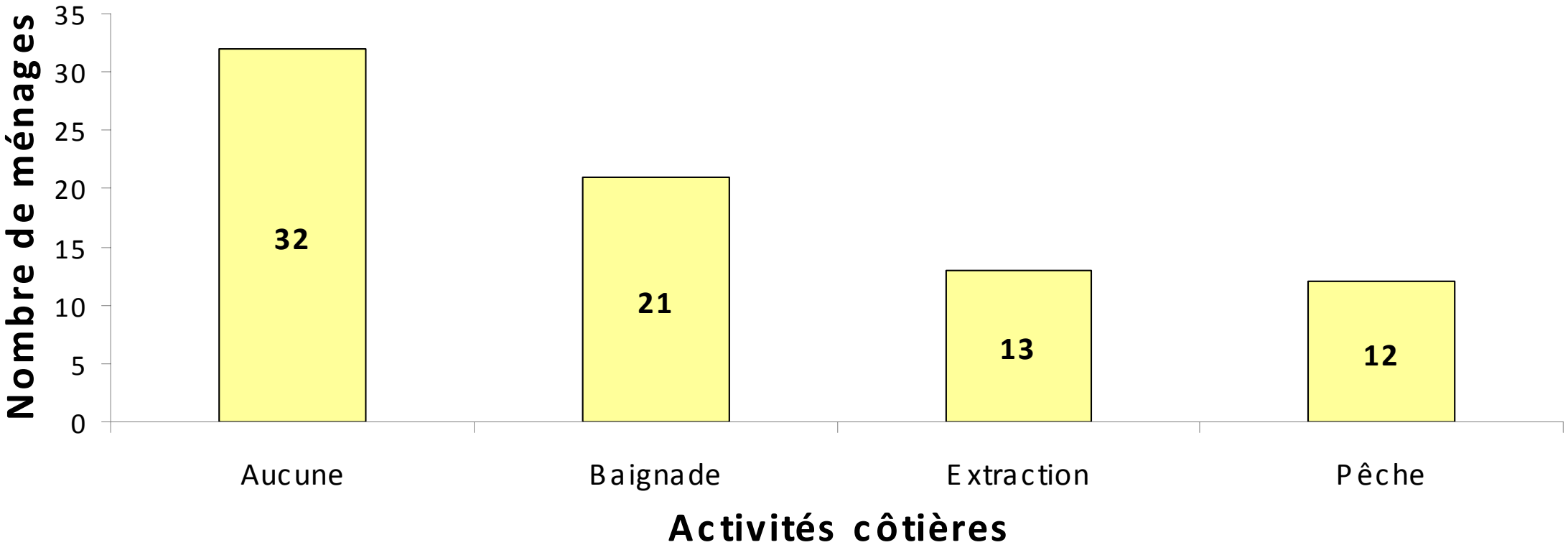
Mitsamiouli



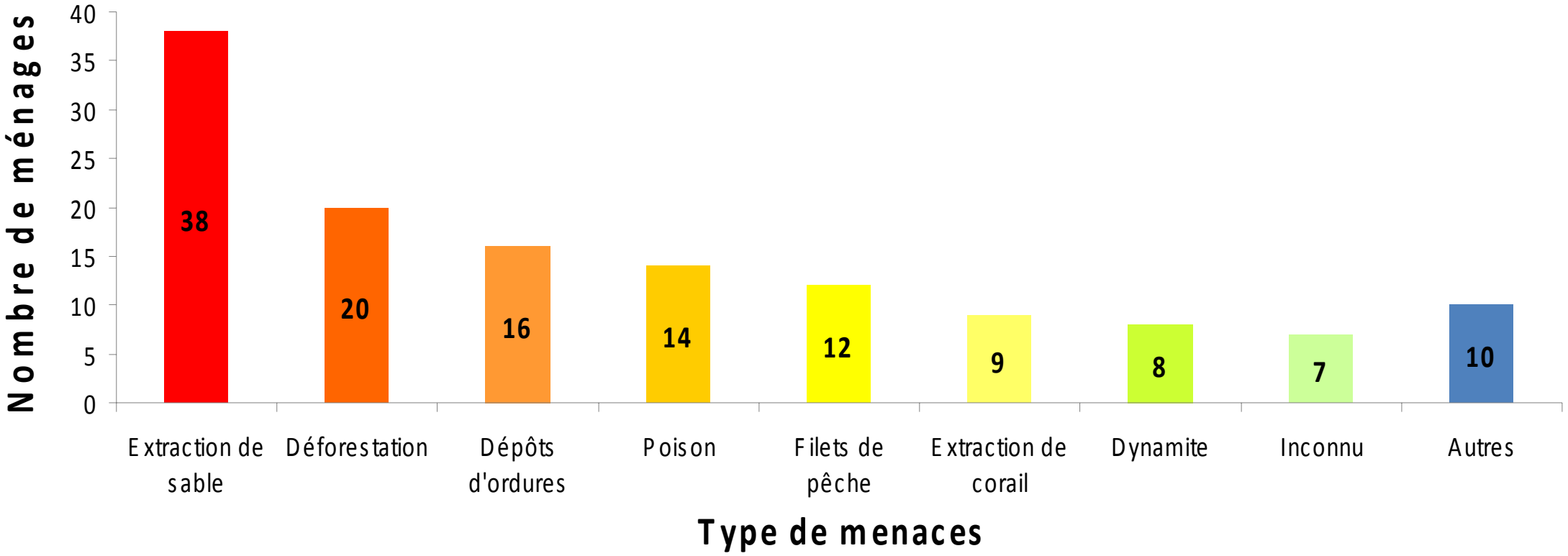
EMPLOIS


Sans occupation 17%
Ouvrier 12%
Secteur publique 5%
Ménagre 18%
Petit commerce 3%
Pêche 2%
Etudiant 19%
Autres emplois 3%
Agriculture 21%

ACTIVITES COTIERES

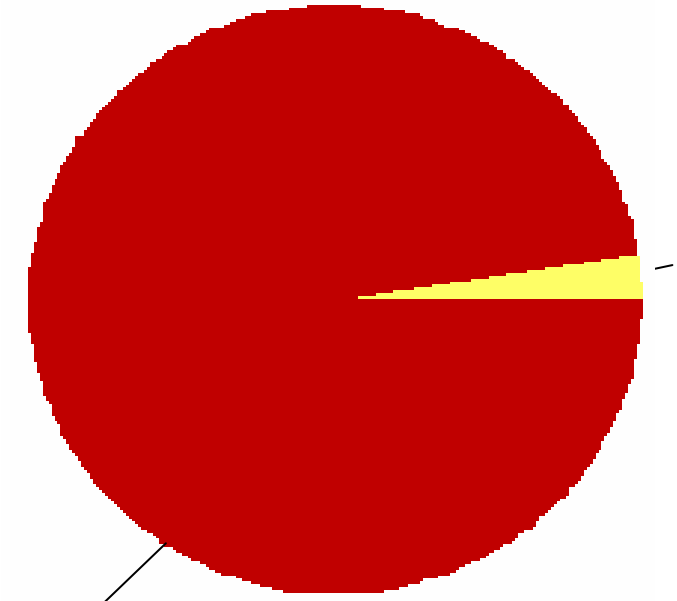


MENACES


Nombre de ménages
40
35
30
25
20
15
10
5
0
38
20
16
14
12
9
8
7
10
Extraction de sable
Déforestation
Dépôts d'ordures
Poison
Filets de pêche
Extraction de corail
Dynamite
Inconnu
Autres
Type de menaces

RESPONSABLES DES MENACES

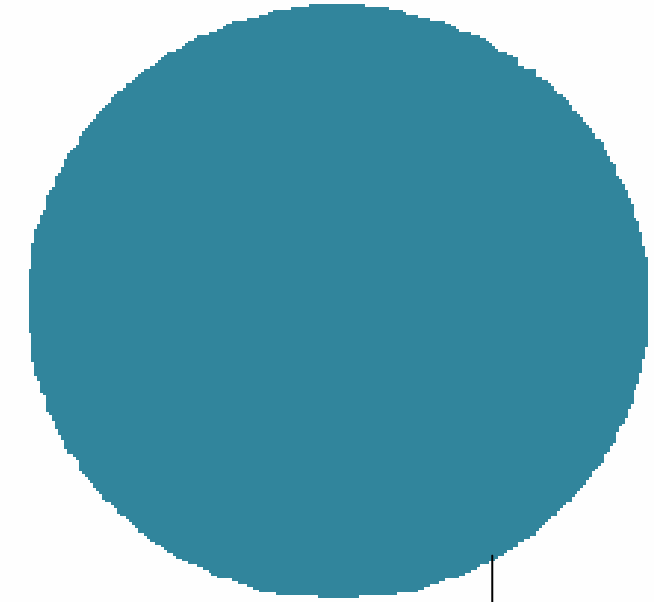
Extraction de sable



Villageois de BAMBAO 97 %

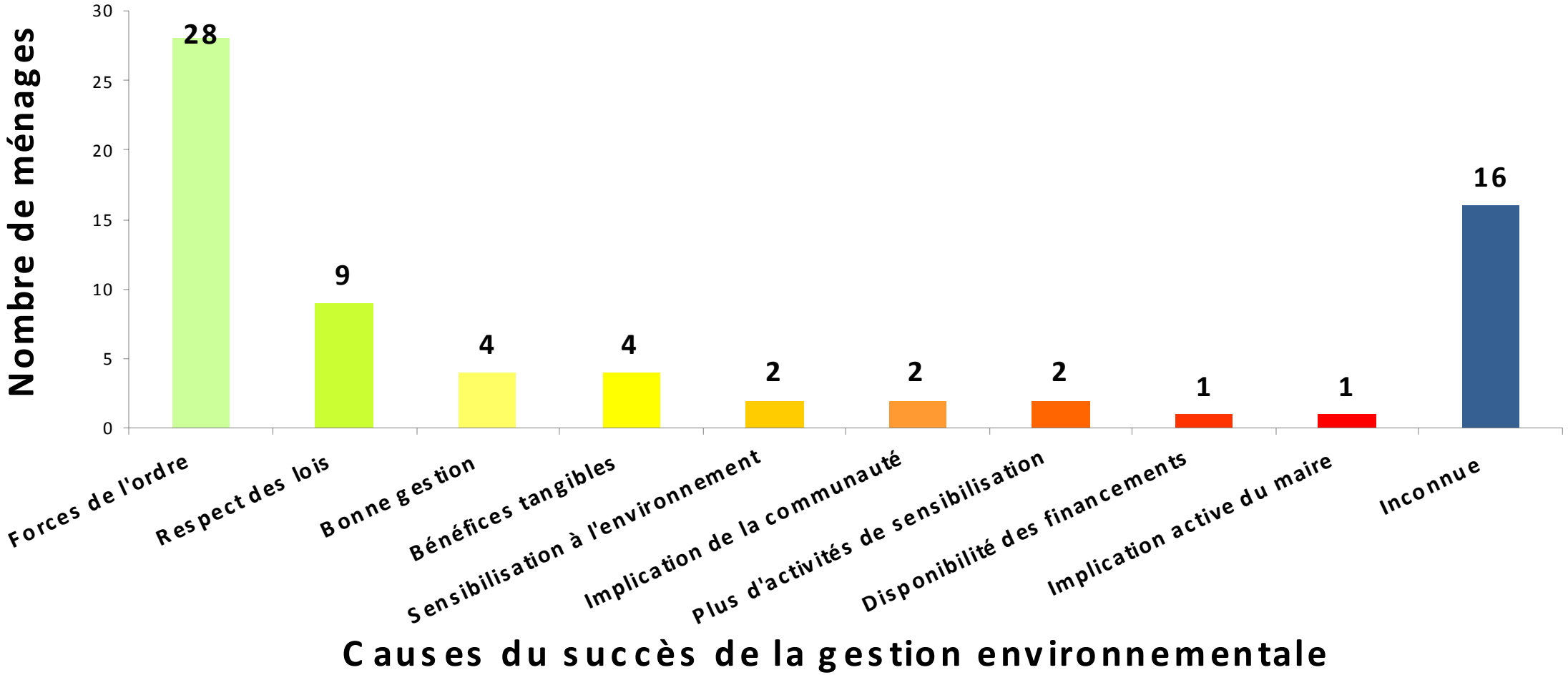
Villageois d'autres villages 3 %

Déforestation

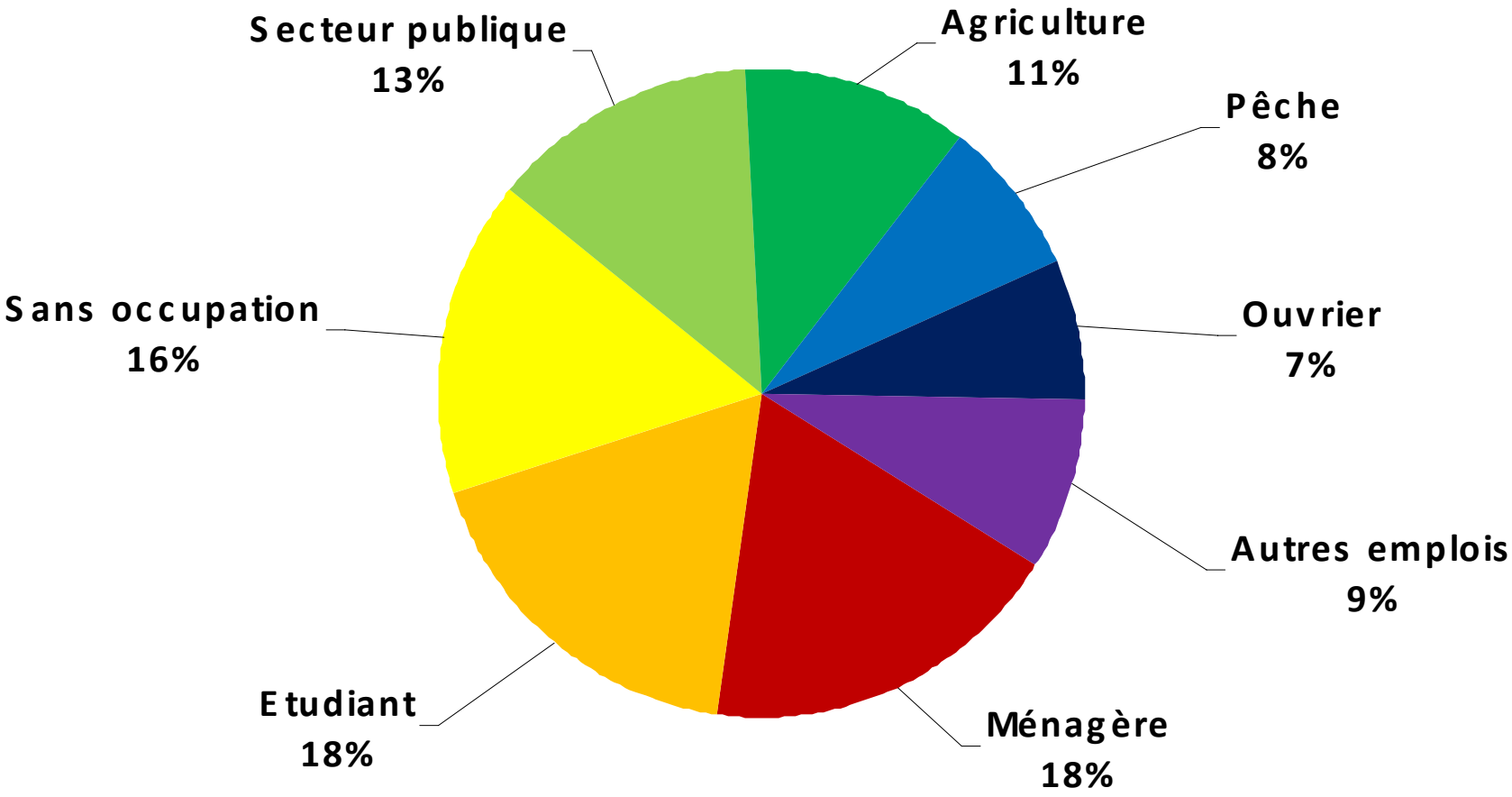


Villageois de BAMBAO 100 %

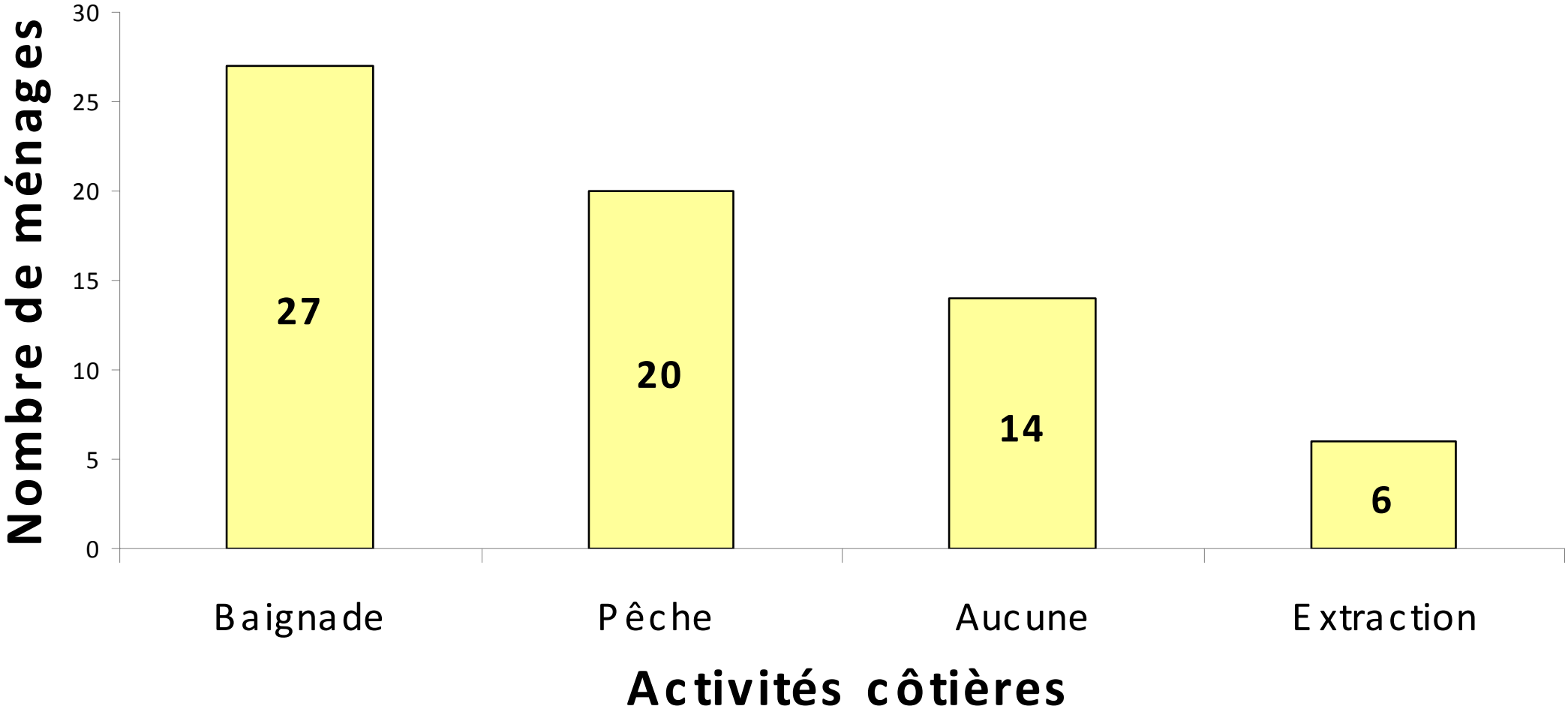
SUCCES DE LA GESTION ENVIRONNEMENTALE



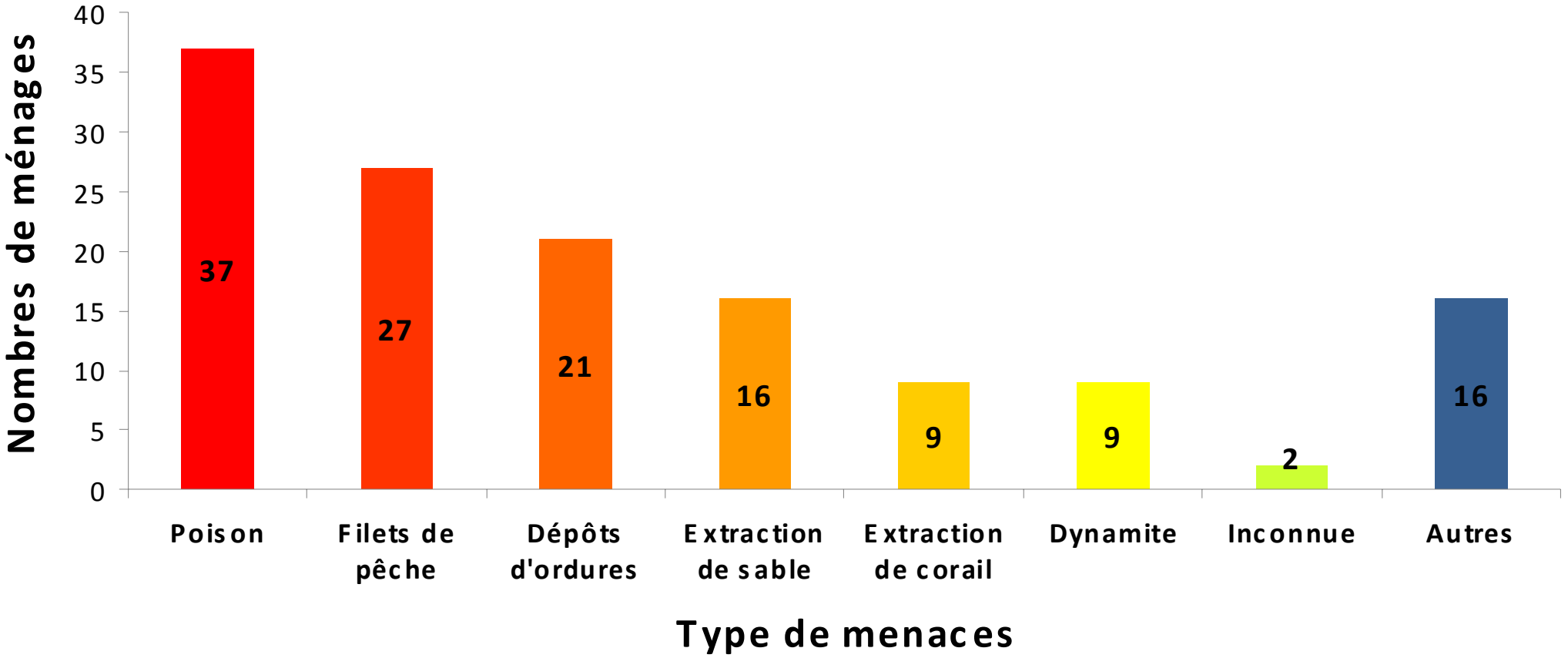
EMPLOIS


Secteur publique
13%
Agriculture
11%
Pêche
8%
Ouvrier
7%
Autres emplois
9%
Ménagère
18%
Etudiant
18%
Sans occupation
16%

ACTIVITES COTIERES

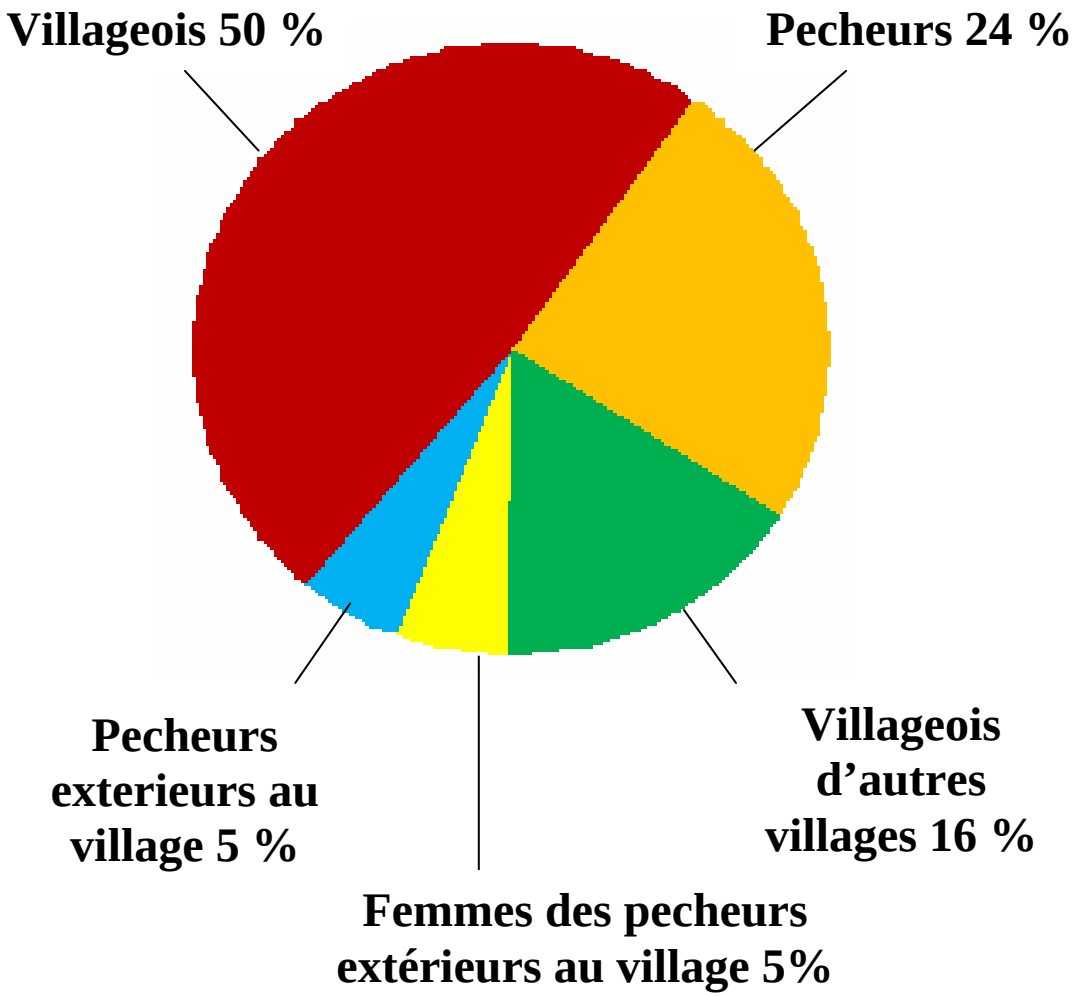


MENACES

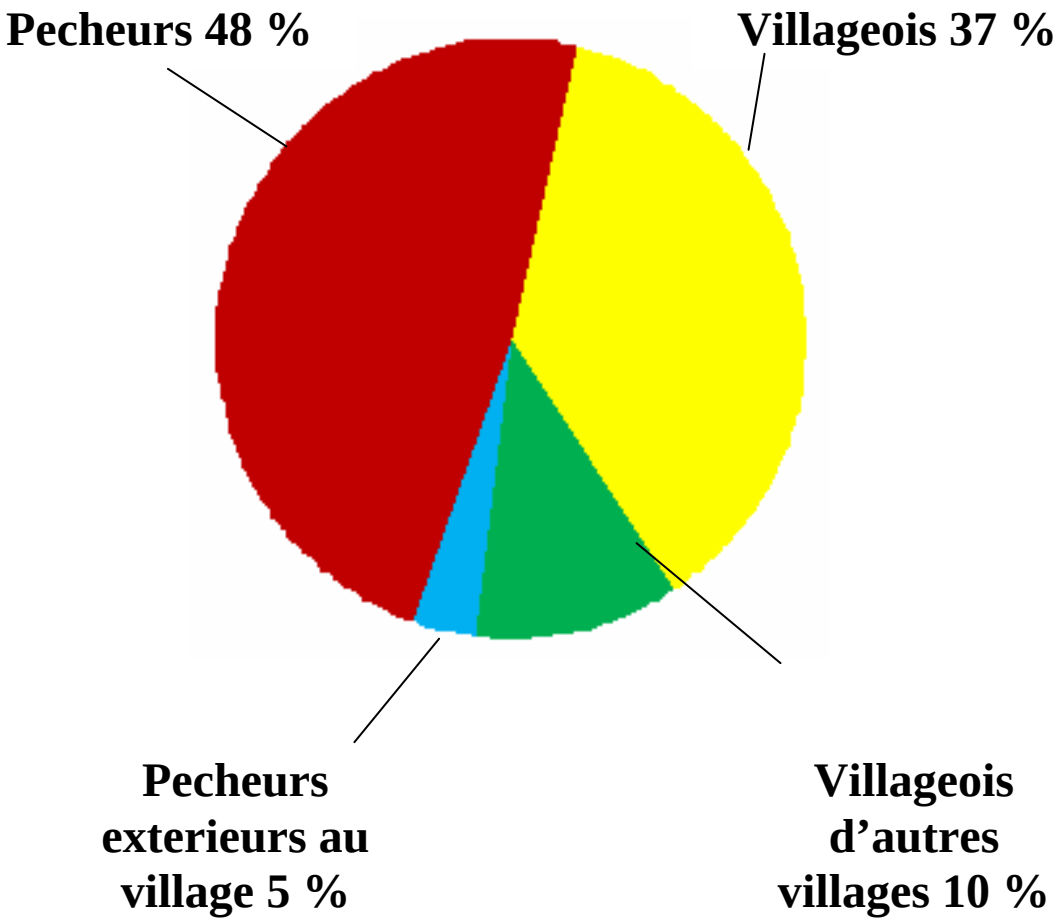

Nombres de ménages
40
35
30
25
20
15
10
5
0
37
27
21
16
9
9
2
16
Poison
Filets de pêche
Dépôts d'ordures
Extraction de sable
Extraction de corail
Dynamite
Inconnue
Autres
Type de menaces

RESPONSABLES

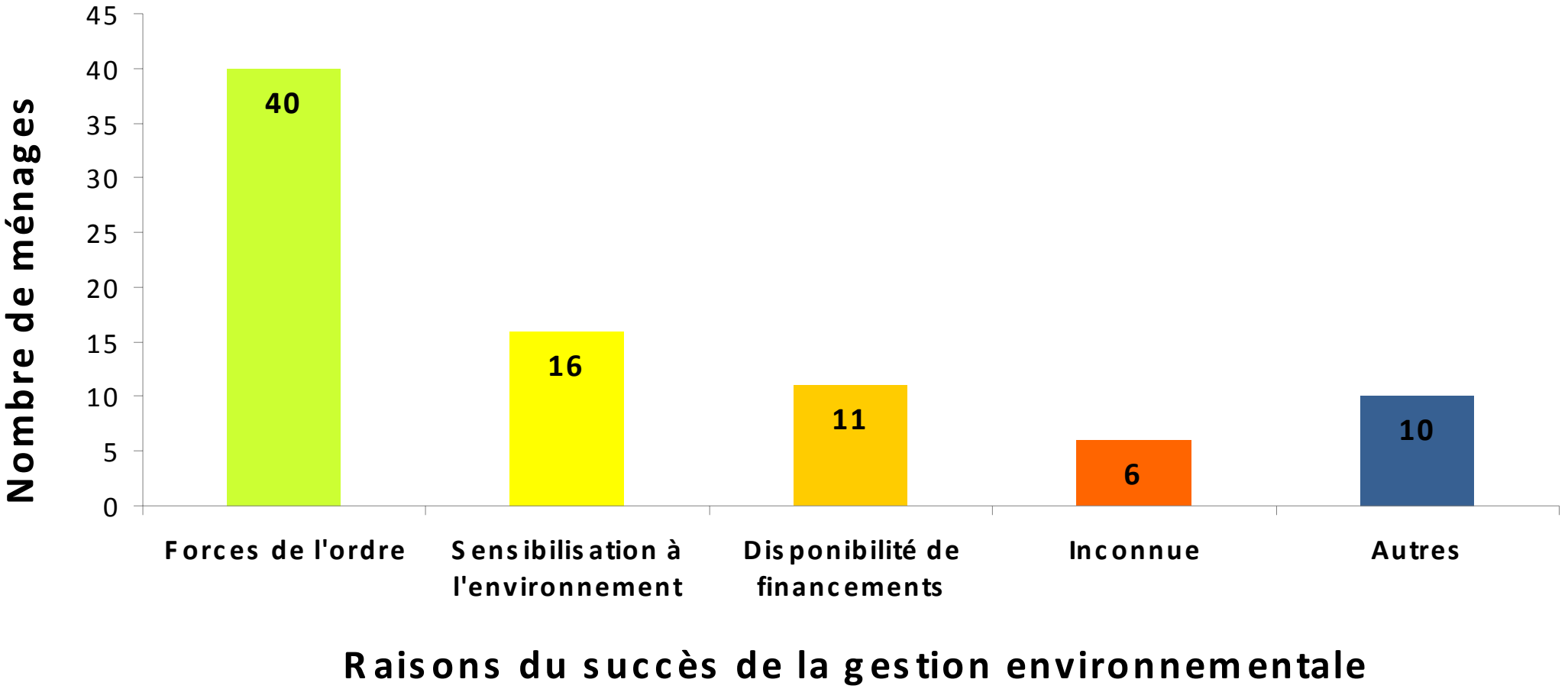
Poison



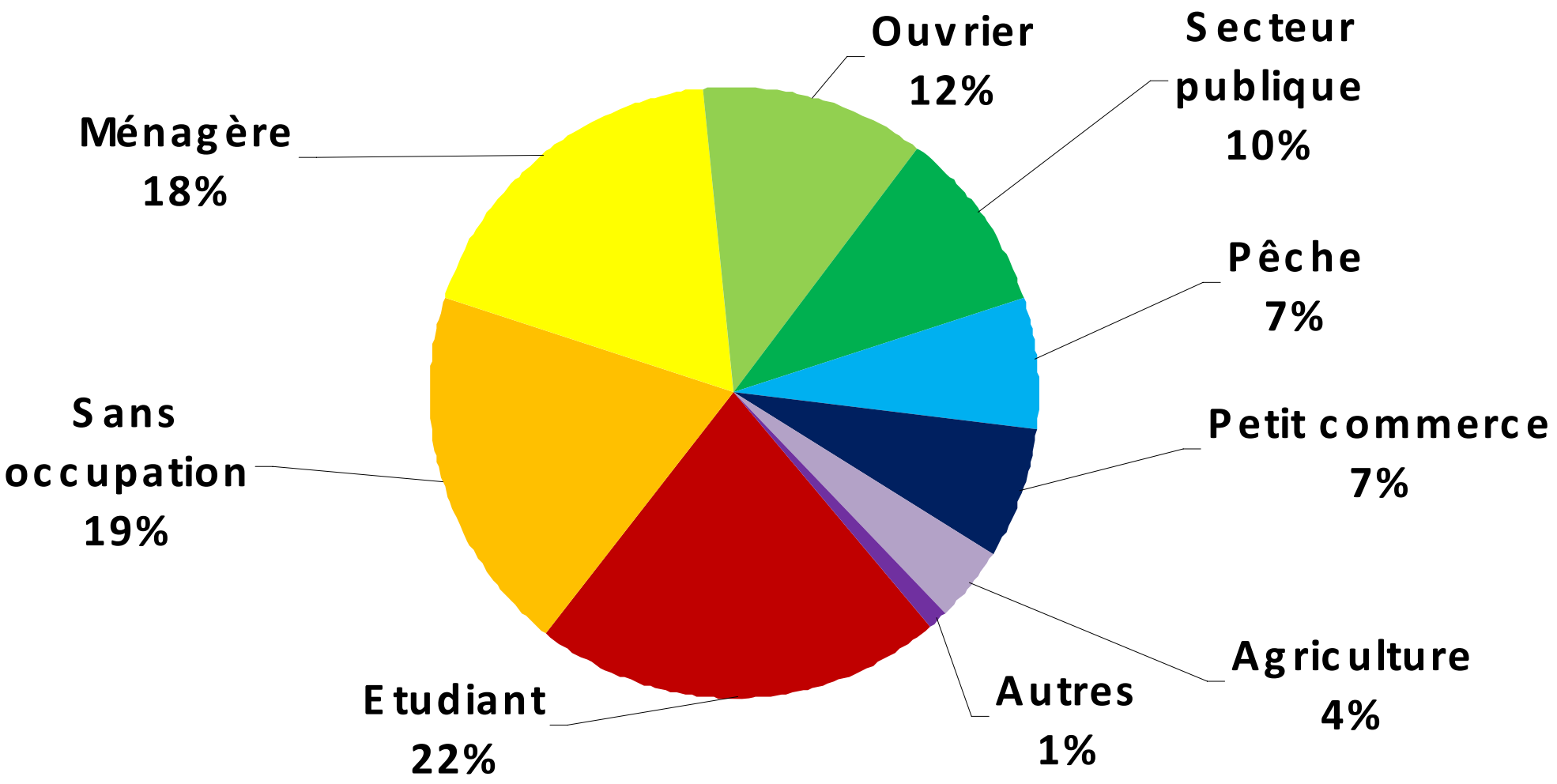
Filets de peche



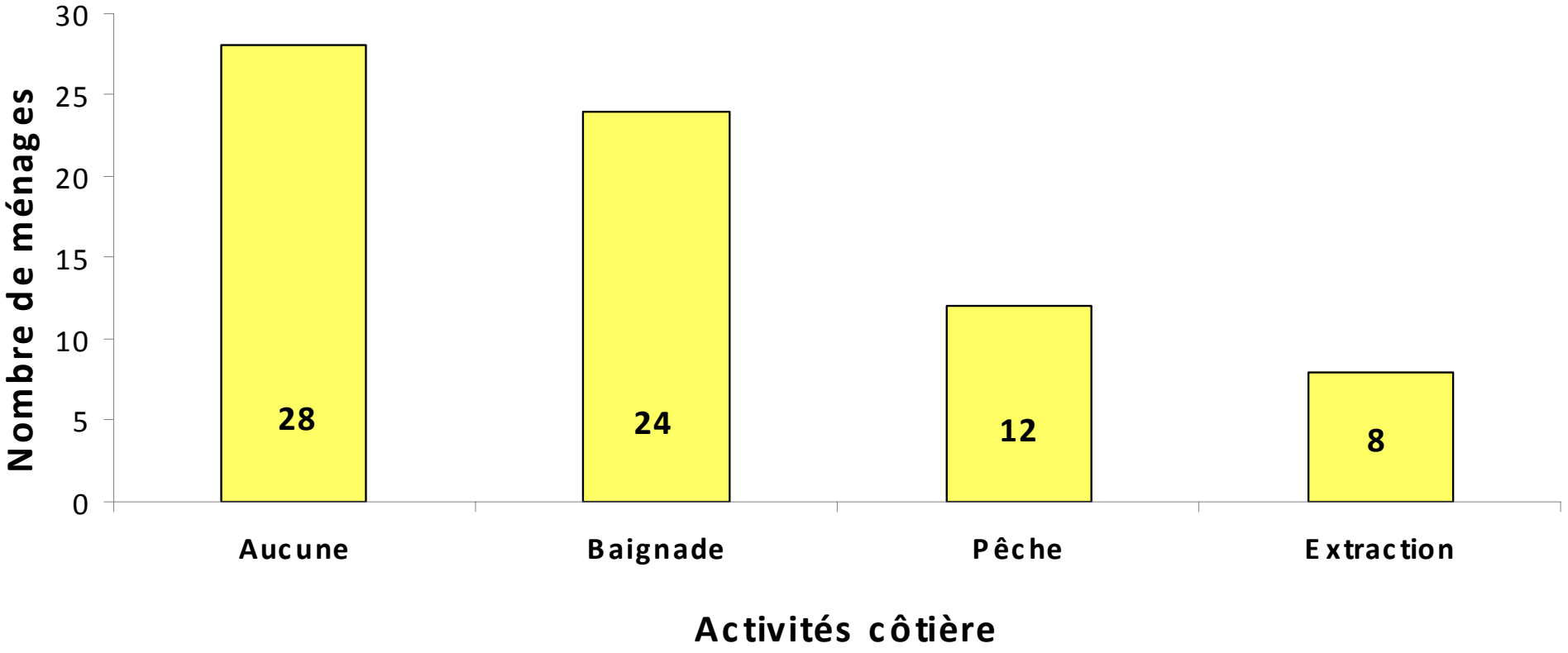
SUCCES DE LA GESTION ENVIRONNEMENTALE



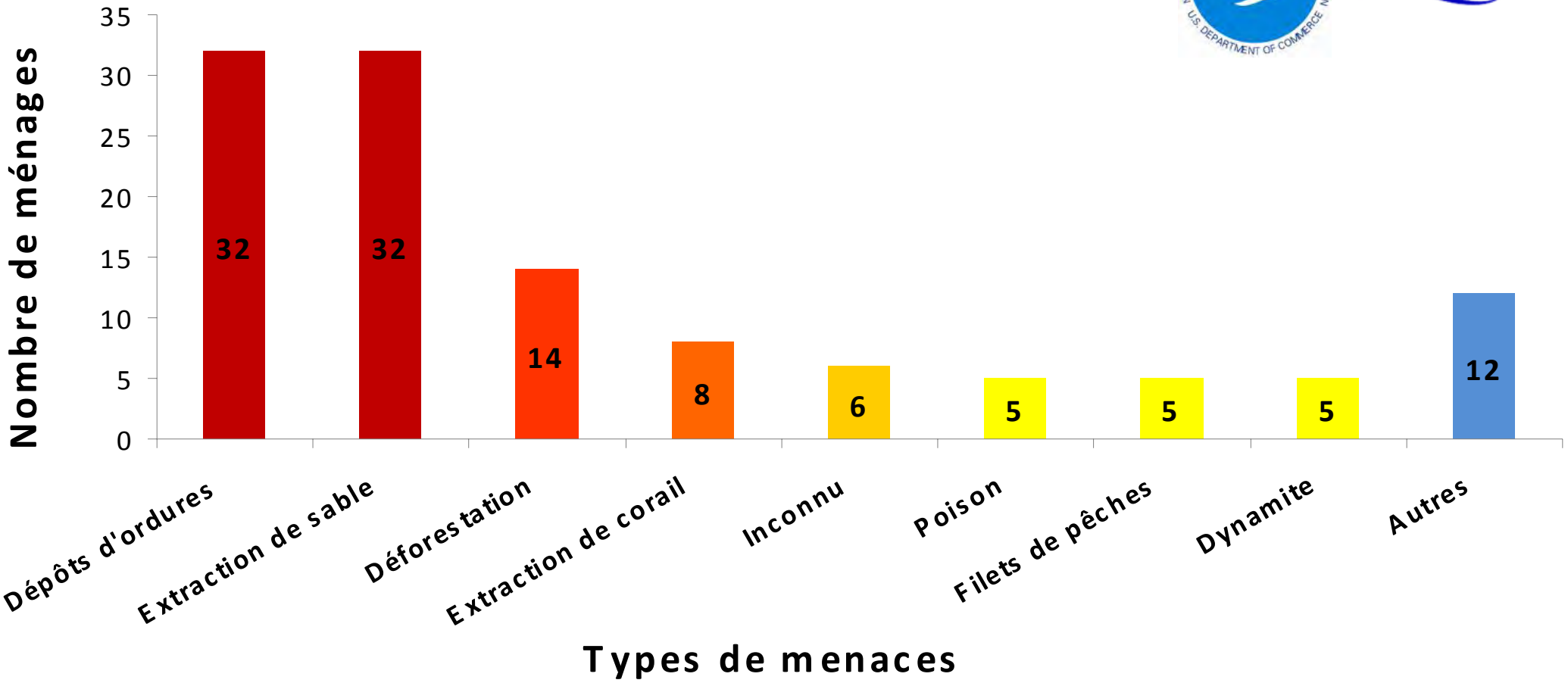
EMPLOIS


Ouvrier
12%
Secteur
publique
10%
Pêche
7%
Petit commerce
7%
Agriculture
4%
Autres
1%
Etudiant
22%
Sans
occupation
19%
Ménagère
18%

ACTIVITES COTIERES

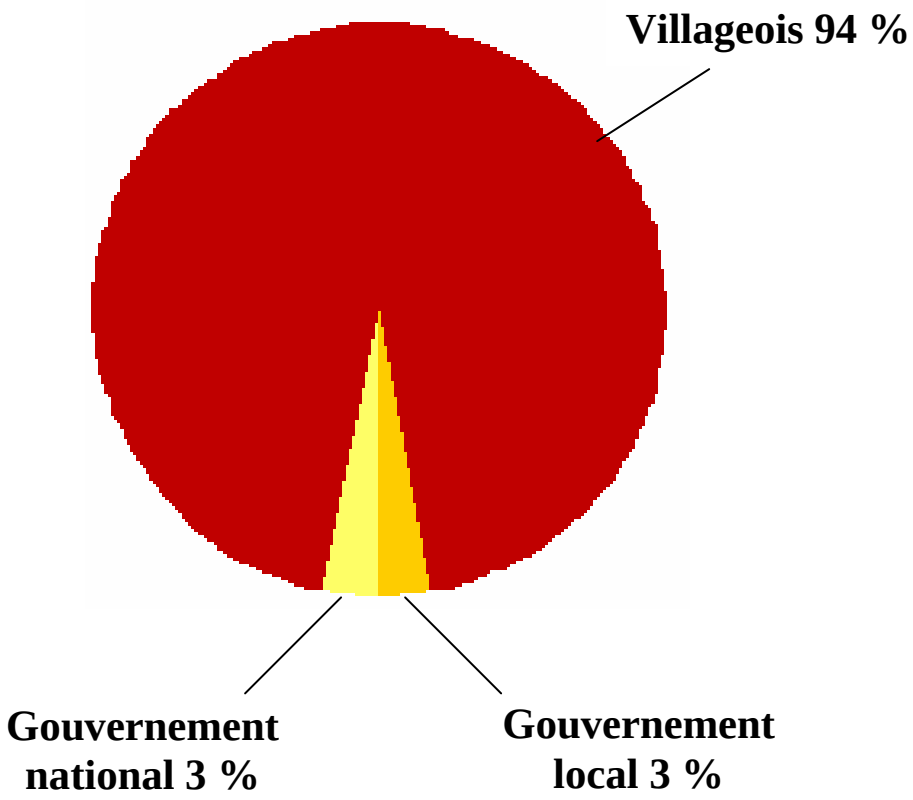


MENACES

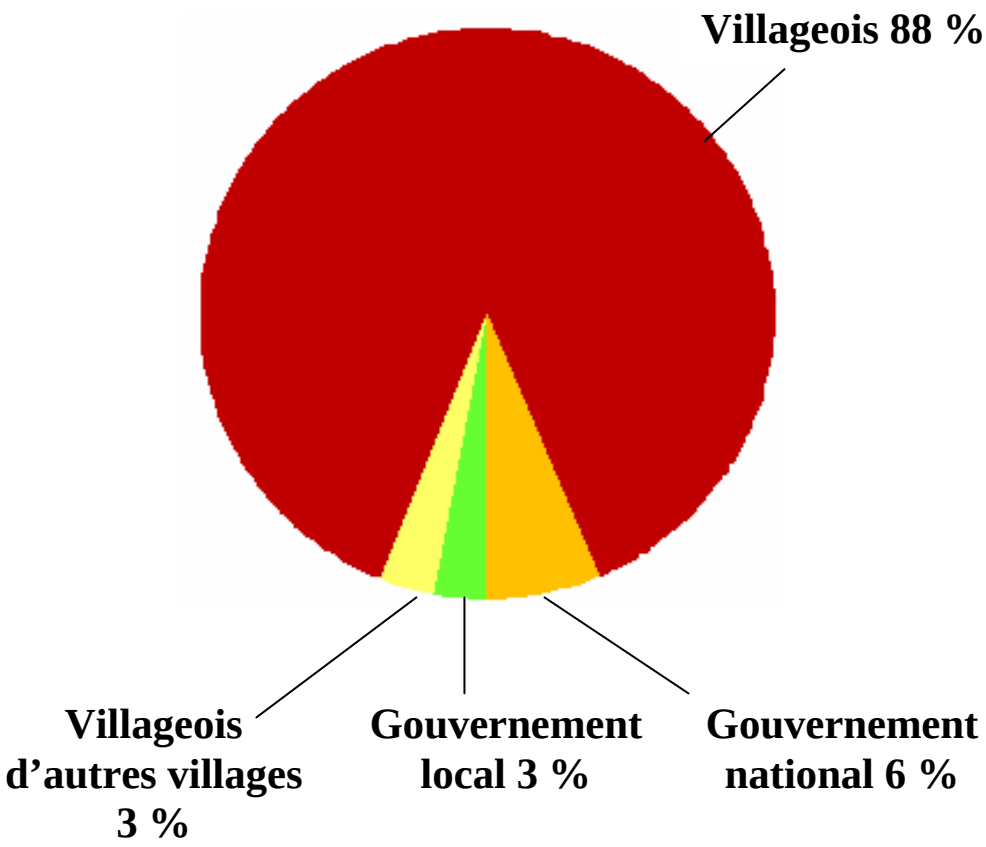

Nombre de ménages
35
30
25
20
15
10
5
0
32
32
14
8
6
5
5
5
12
Dépôts d'ordures
Extraction de sable
Déforestation
Extraction de corail
Inconnu
Poison
Filets de pêches
Dynamite
Autres
Types de menaces

RESPONSABLES

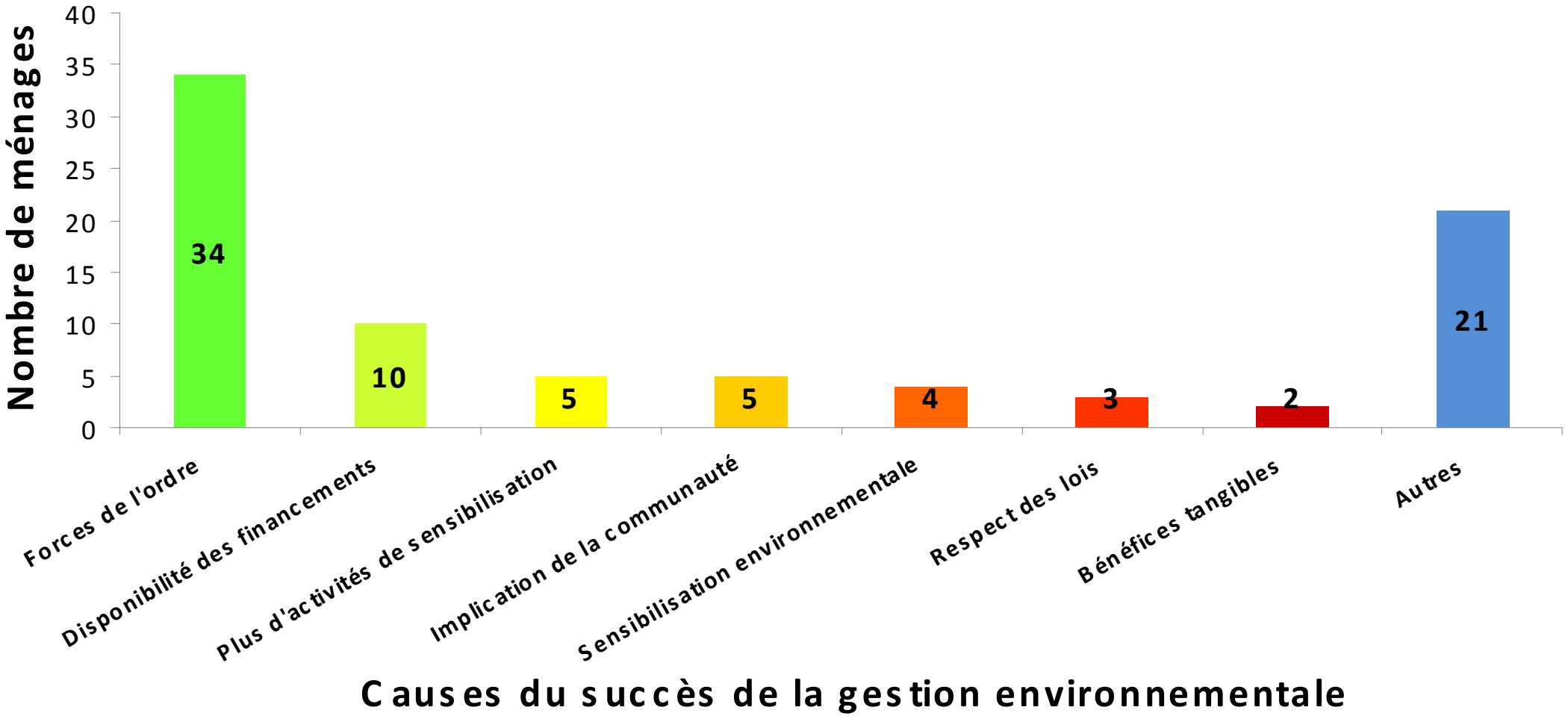
Dépôts d'ordures



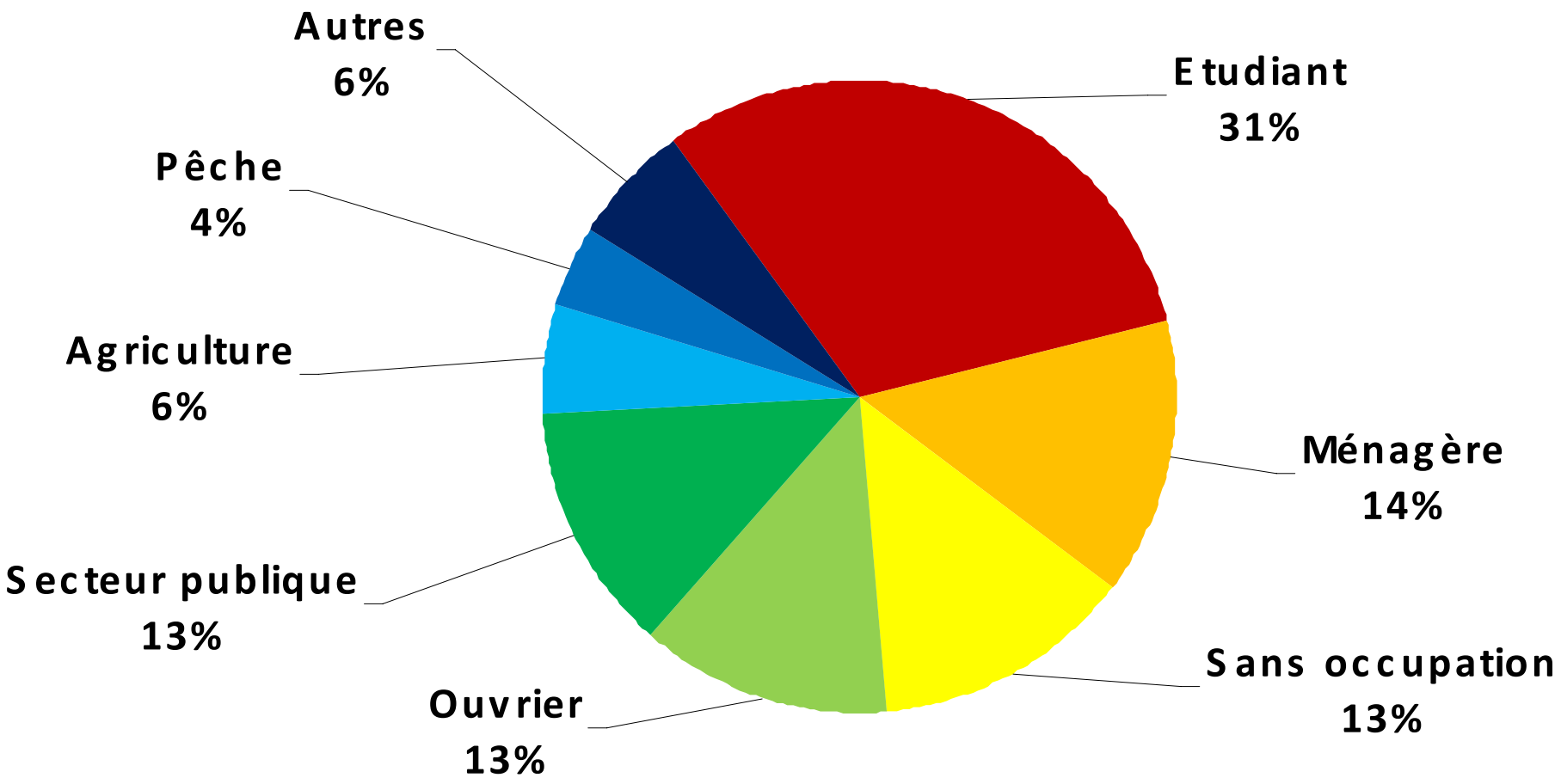
Extraction de sable



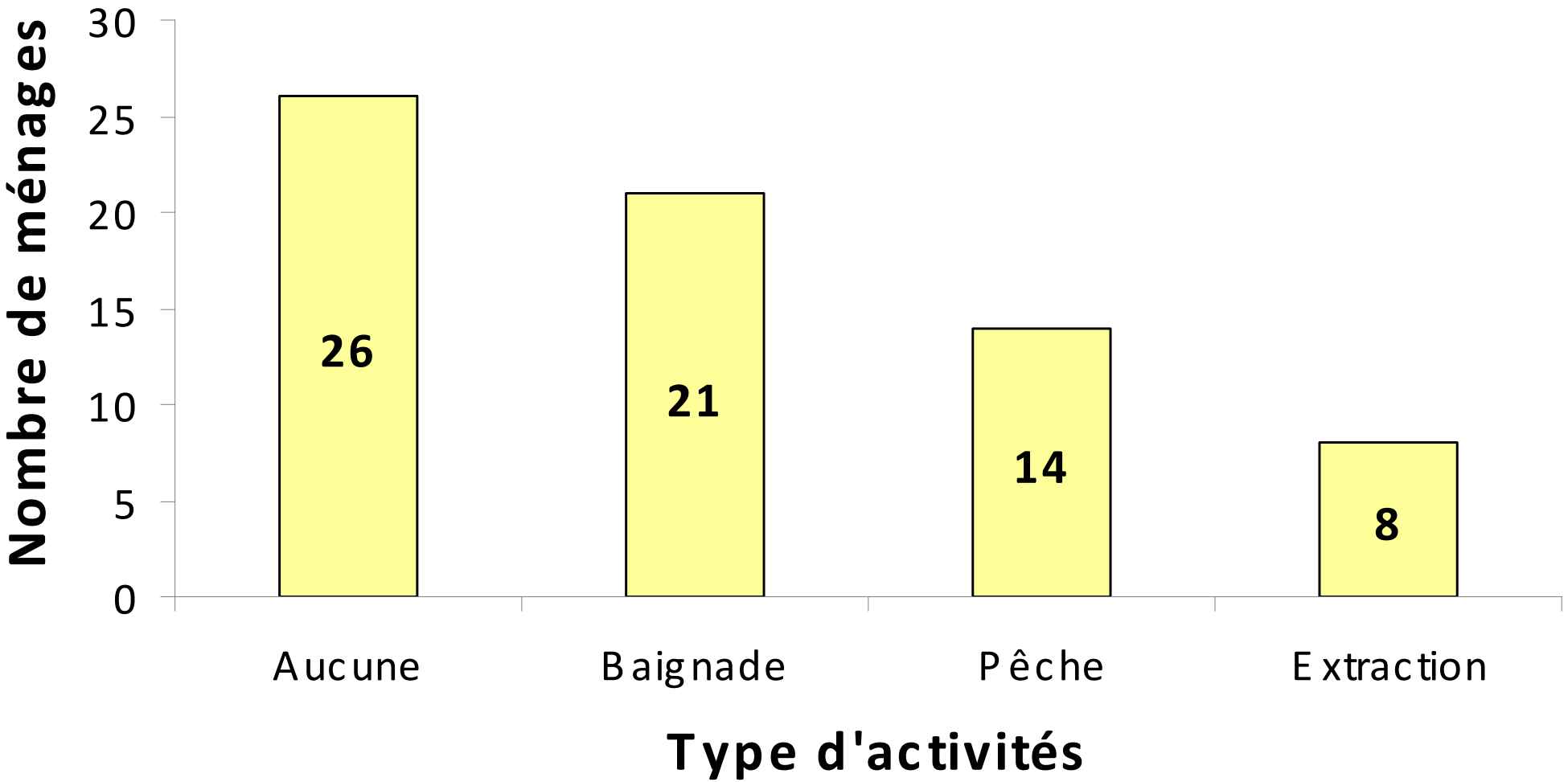
SUCCES DE LA GESTION ENVIRONNEMENTALE



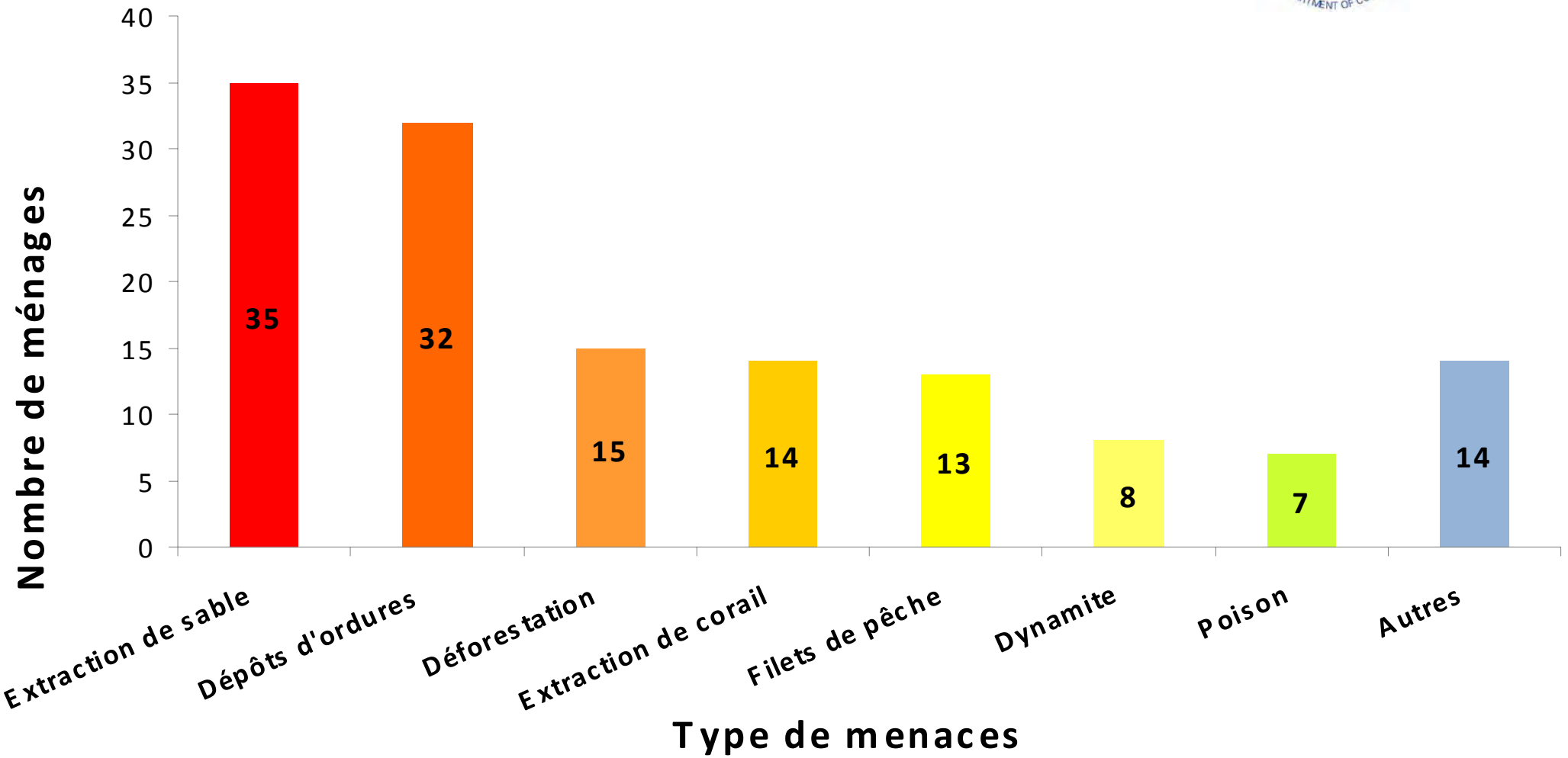
EMPLOIS


Autres
6%
Etudiant
31%
Pêche
4%
Agriculture
6%
Ménagère
14%
Secteur publique
13%
Sans occupation
13%
Ouvrier
13%

ACTIVITES COTIERES

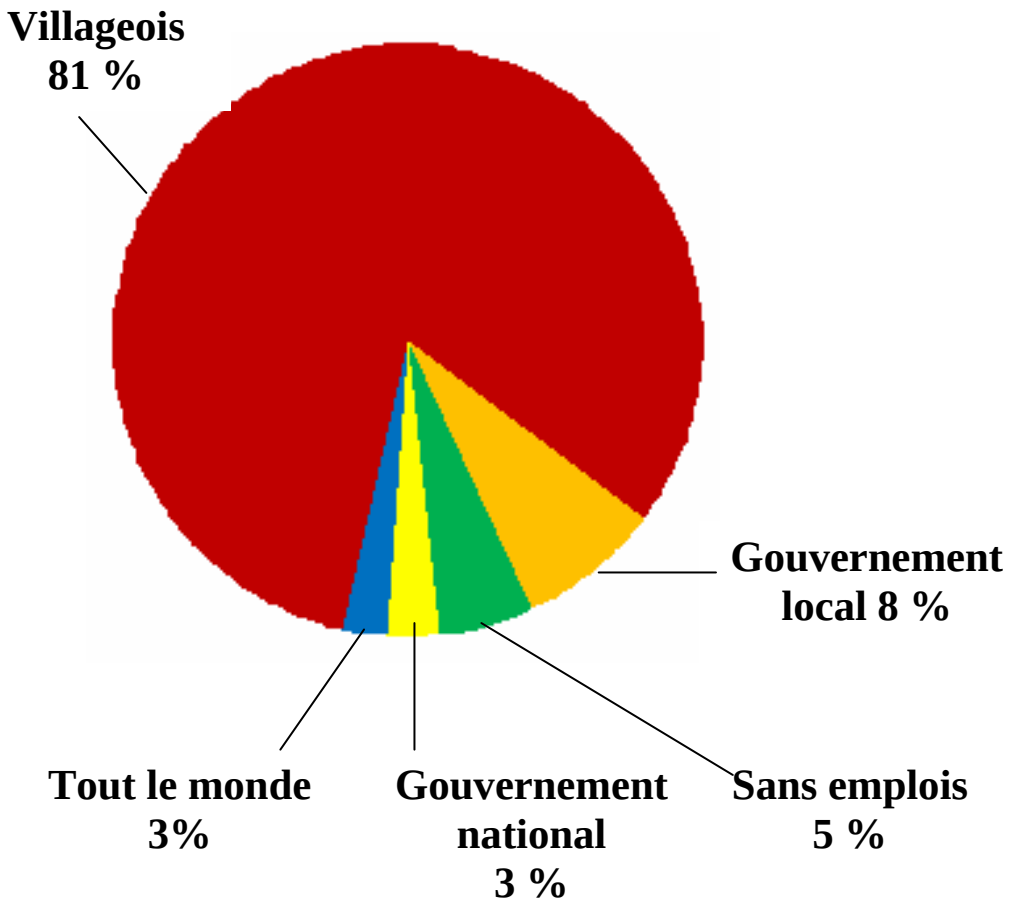


MENACES

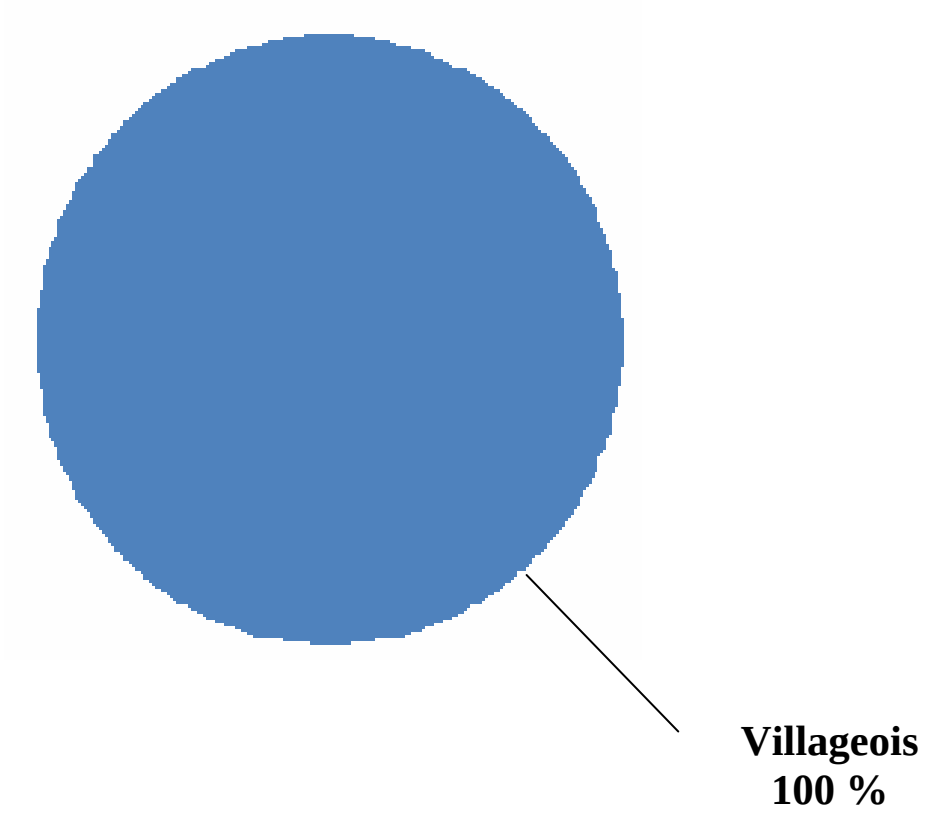

Nombre de ménages
40
35
30
25
20
15
10
5
0
35
32
15
14
13
8
7
14
Extraction de sable
Dépôts d'ordures
Déforestation
Extraction de corail
Filets de pêche
Dynamite
Poison
Autres
Type de menaces

RESPONSABLES

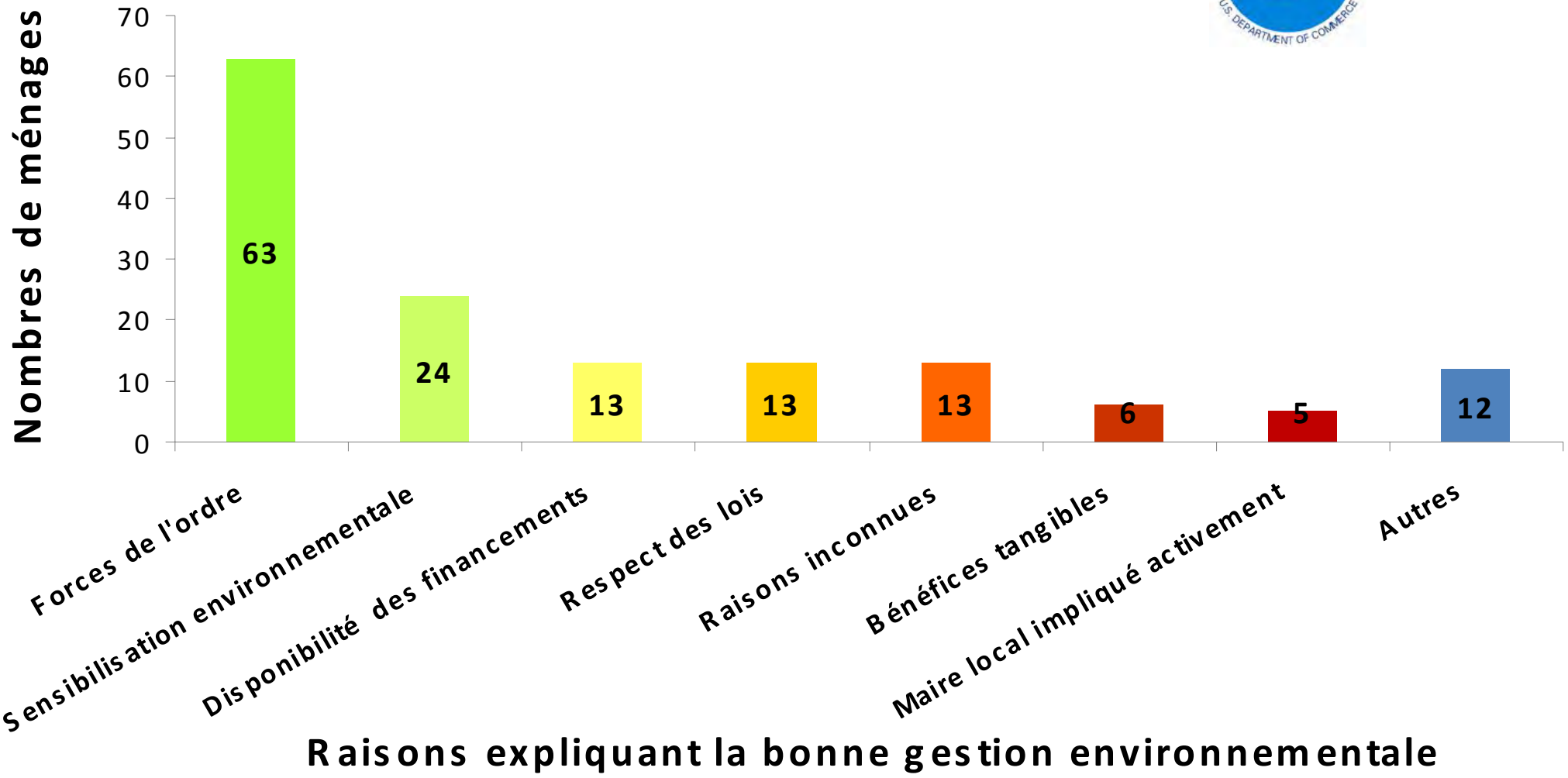
Extraction de sable



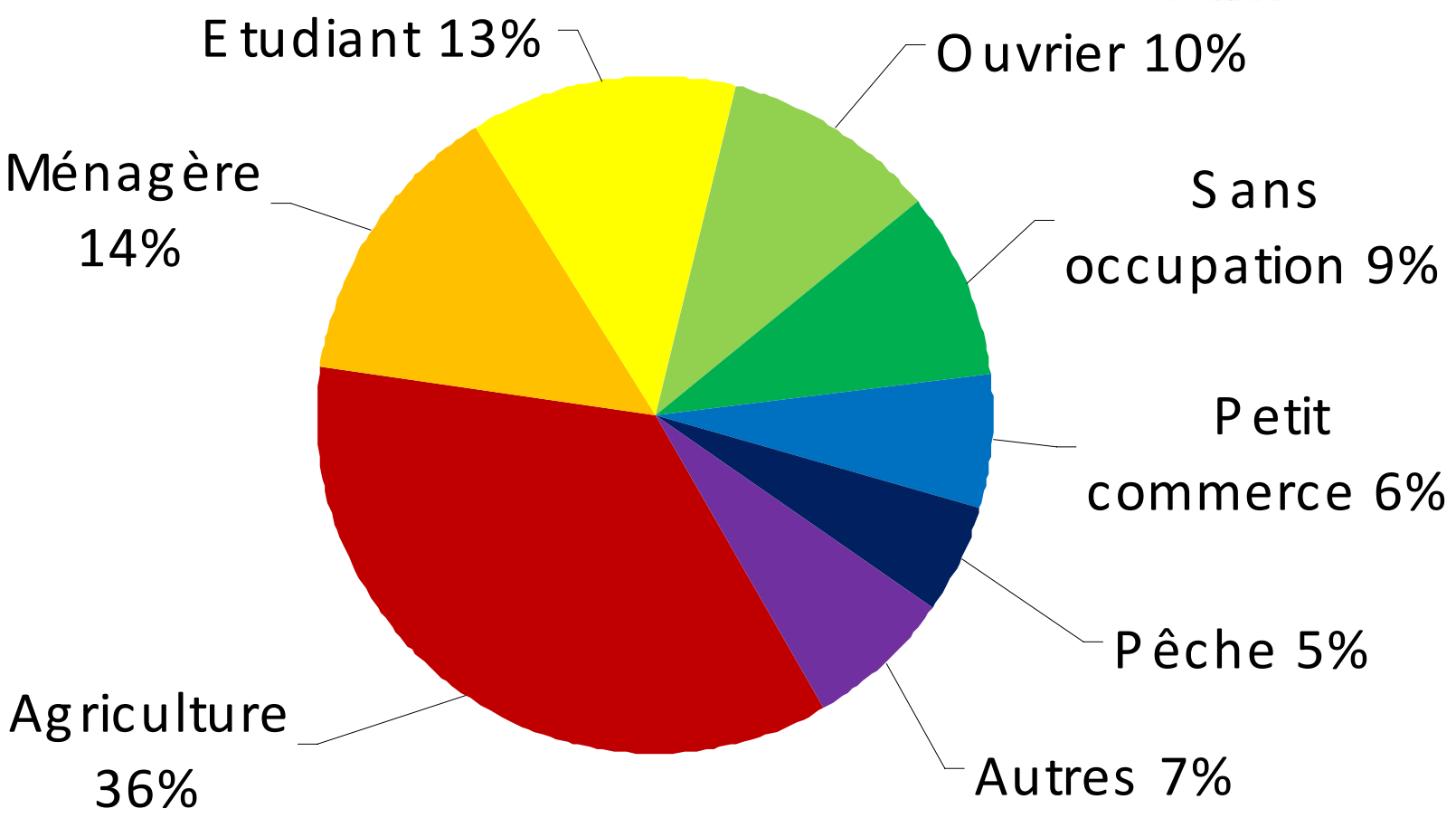
Dépôts d'ordures



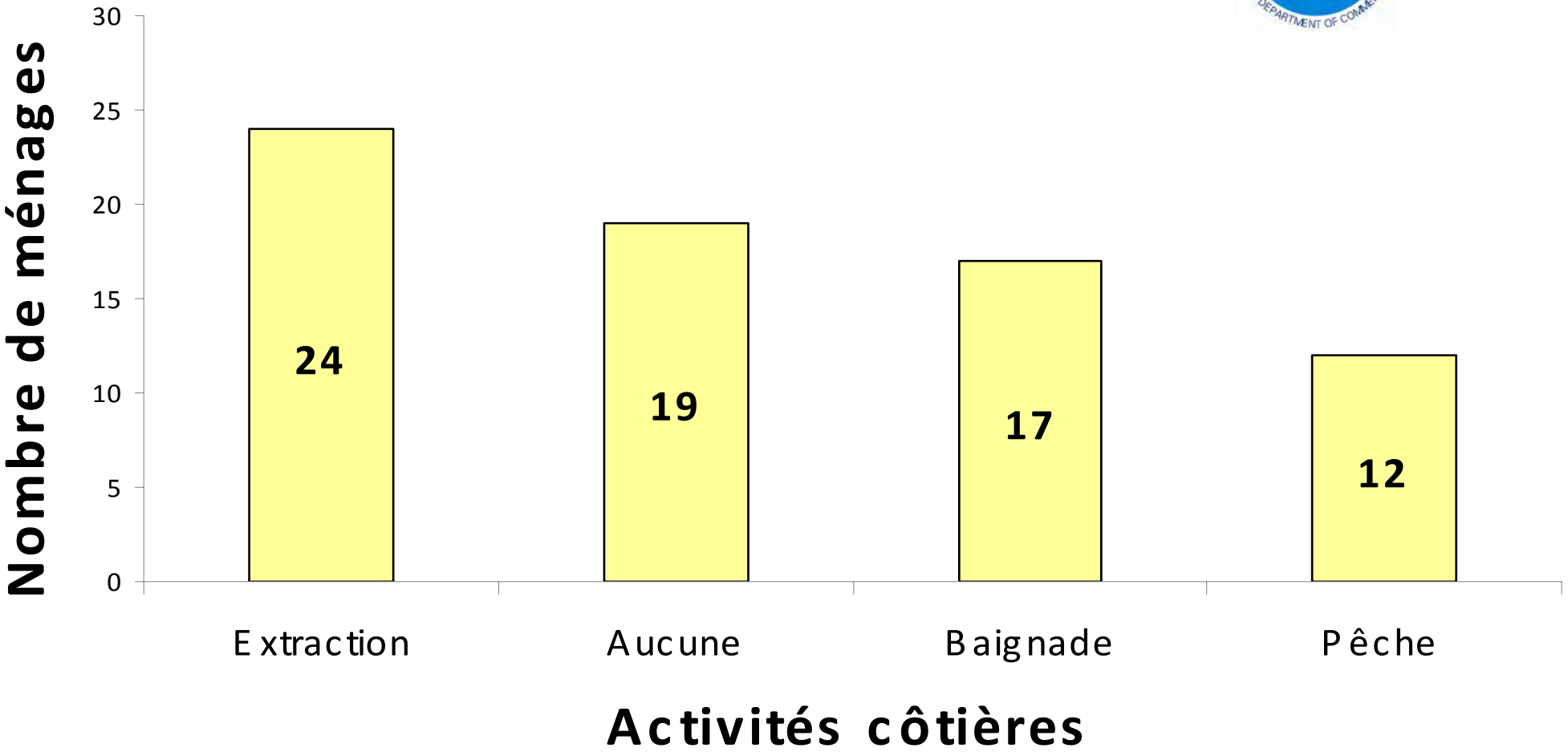
SUCCES DE LA GESTION ENVIRONNEMENTALE



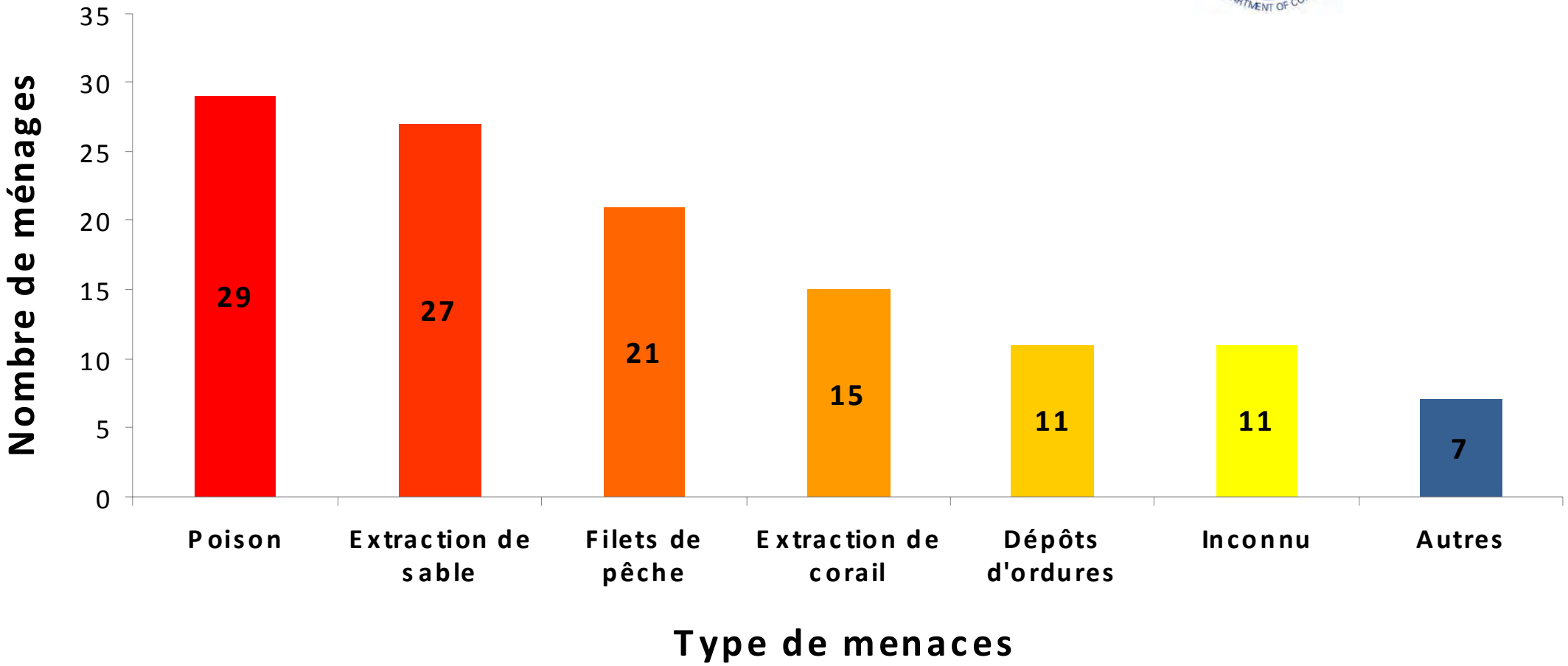
EMPLOIS


Etudiant 13%
Ouvrier 10%
Ménagère 14%
Sans occupation 9%
Petit commerce 6%
Pêche 5%
Agriculture 36%
Autres 7%

ACTIVITES COTIERES

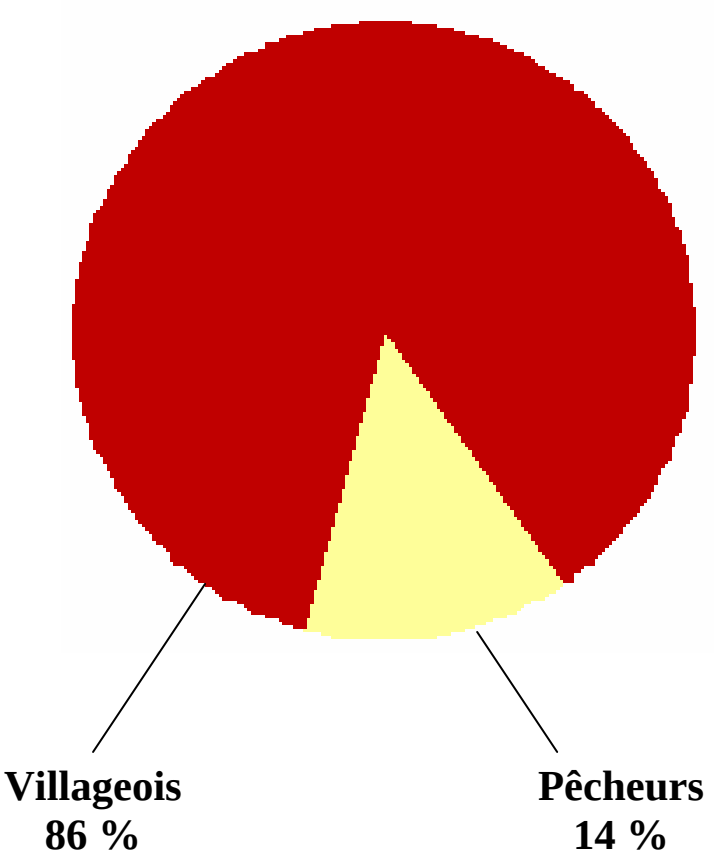


MENACES

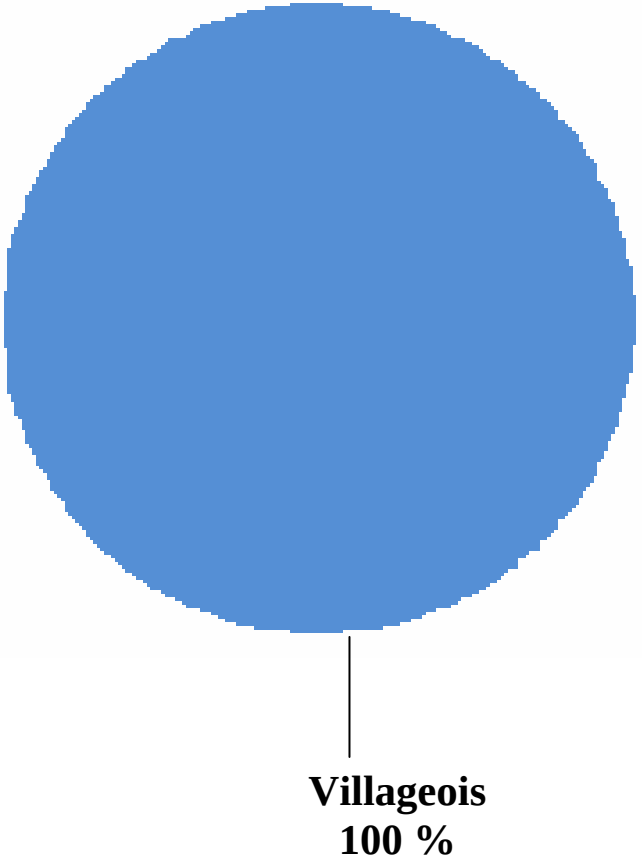

Nombre de ménages
35
30
25
20
15
10
5
0
29
27
21
15
11
11
7
Poison
Extraction de sable
Filets de pêche
Extraction de corail
Dépôts d'ordures
Inconnu
Autres
Type de menaces

RESPONSABLES

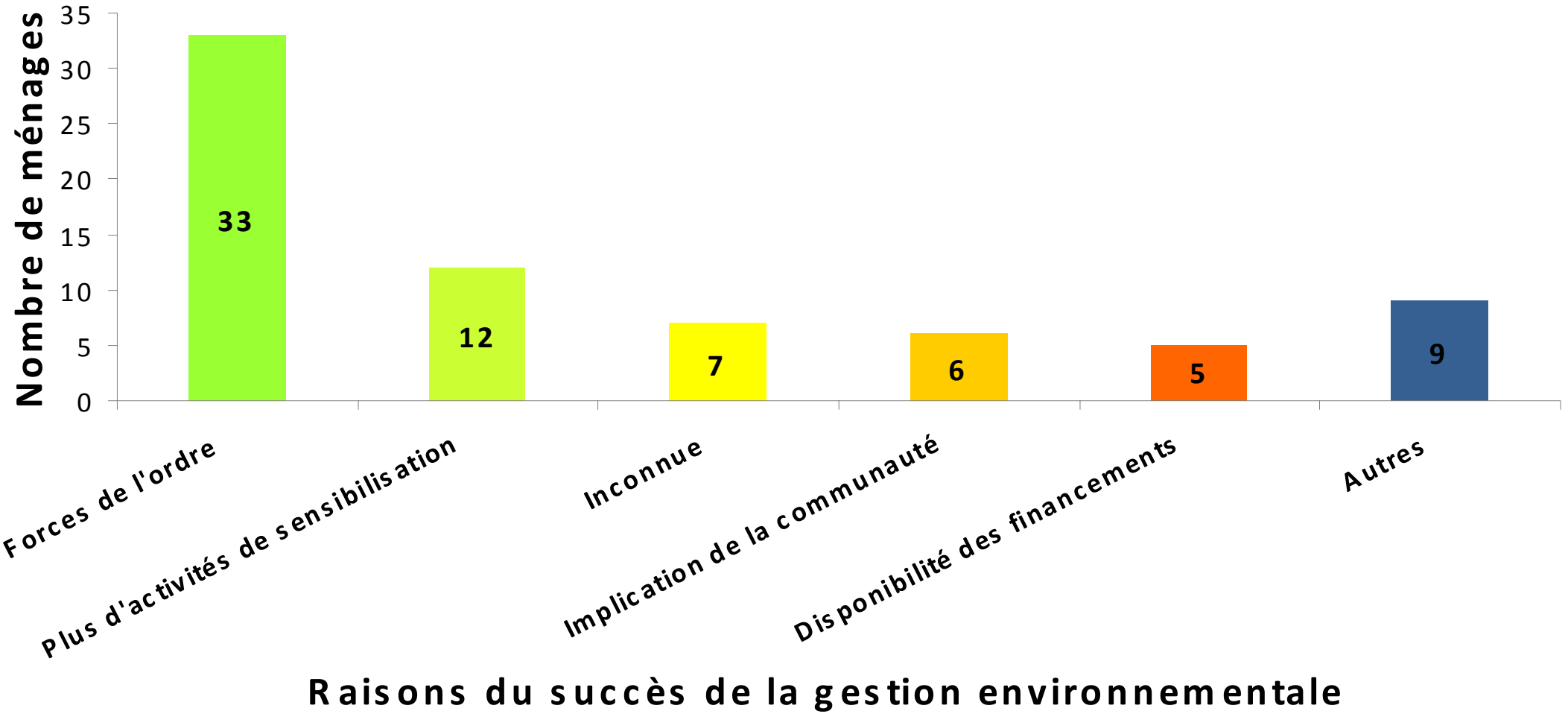
Poison



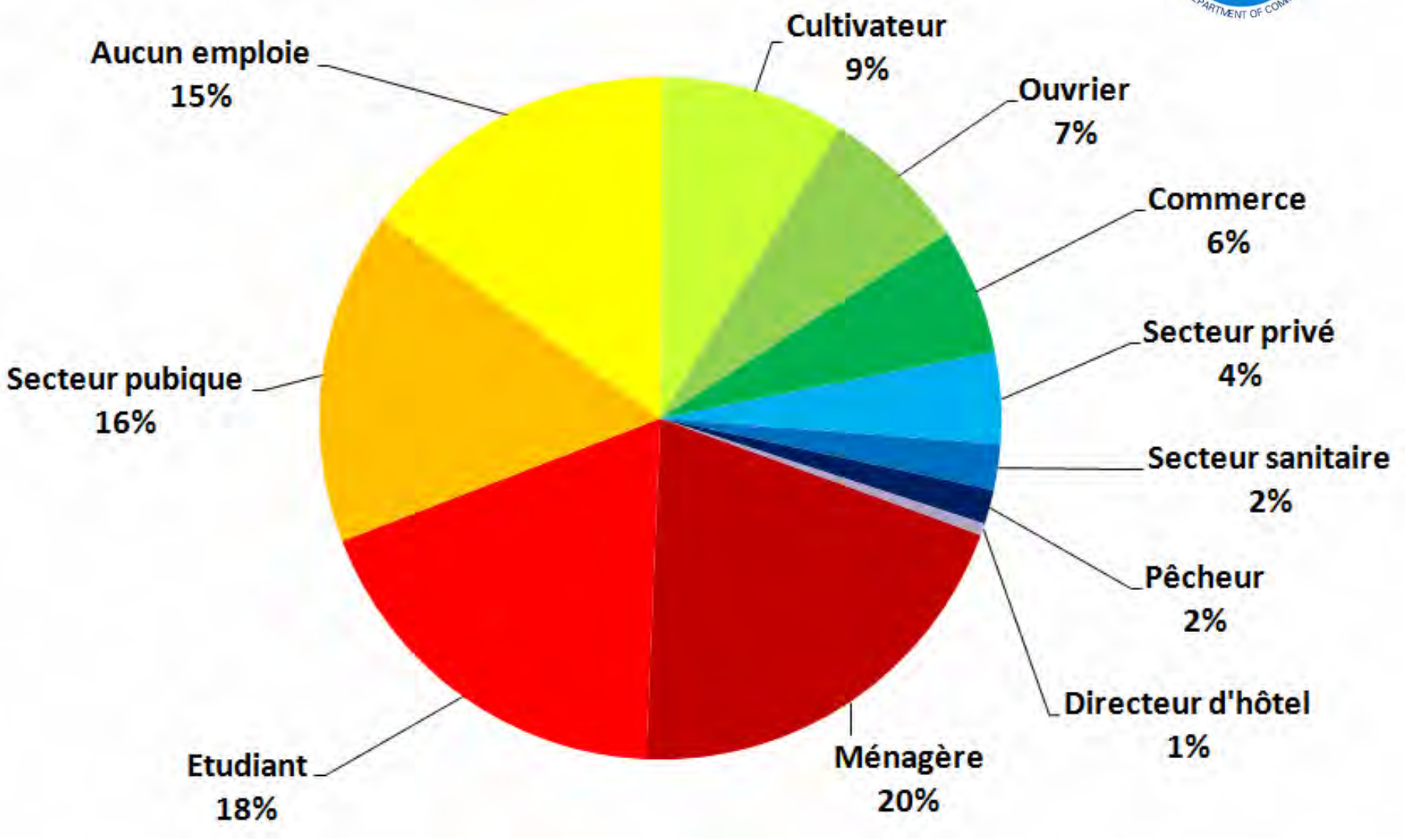
Extraction de sable



SUCCES DE LA GESTION ENVIRONNEMENTALE

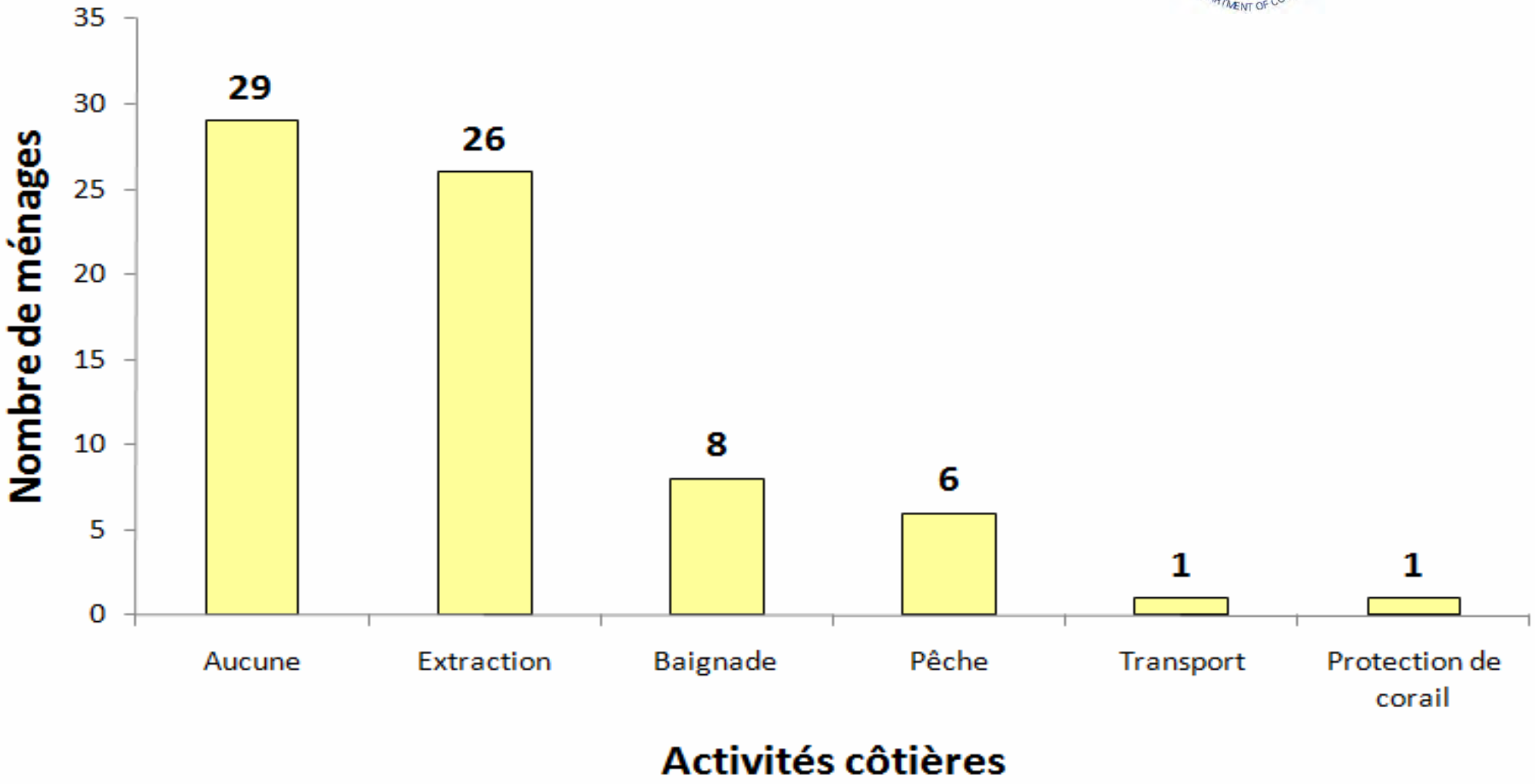


EMPLOIS


Cultivateur
9%
Ouvrier
7%
Commerce
6%
Secteur privé
4%
Secteur sanitaire
2%
Pêcheur
2%
Directeur d'hôtel
1%
Ménagère
20%
Etudiant
18%
Secteur pubique
16%
Aucun emploie
15%

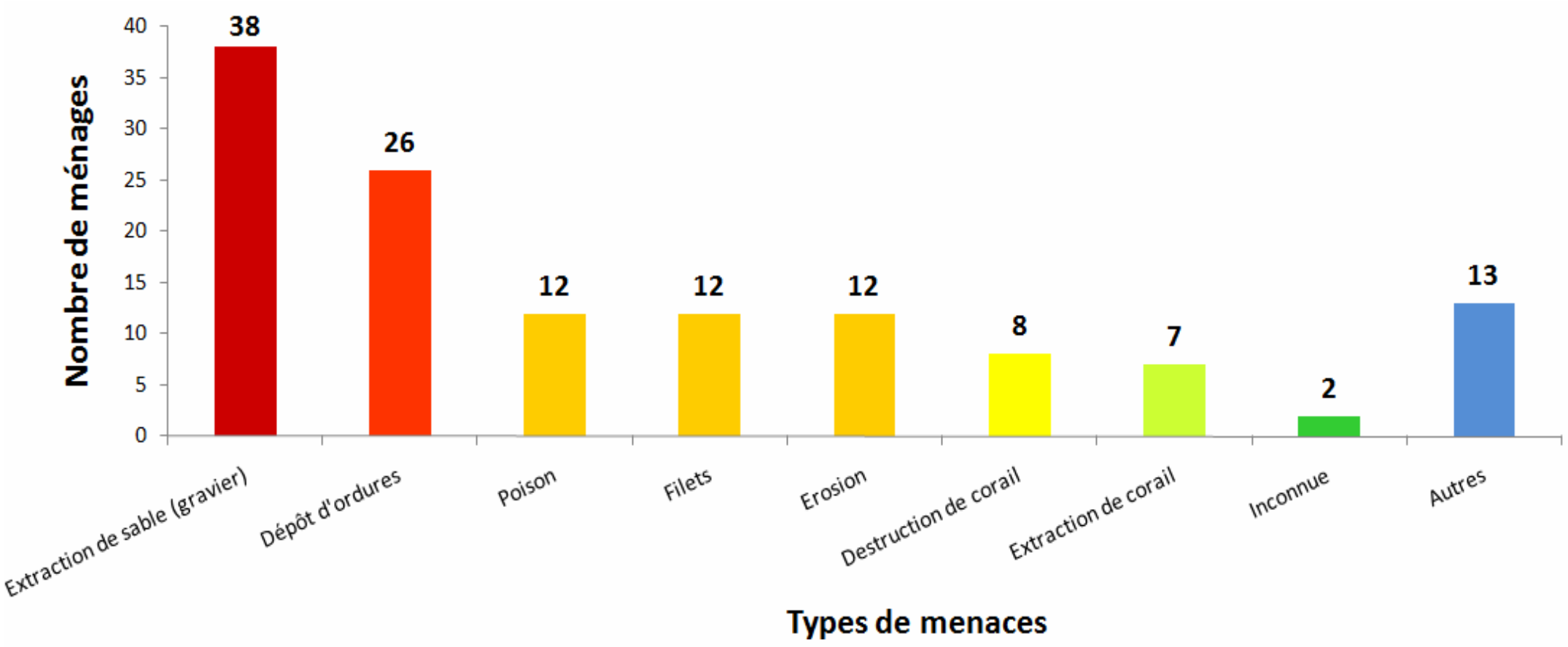
DJOEZI

ACTIVITES COTIERES



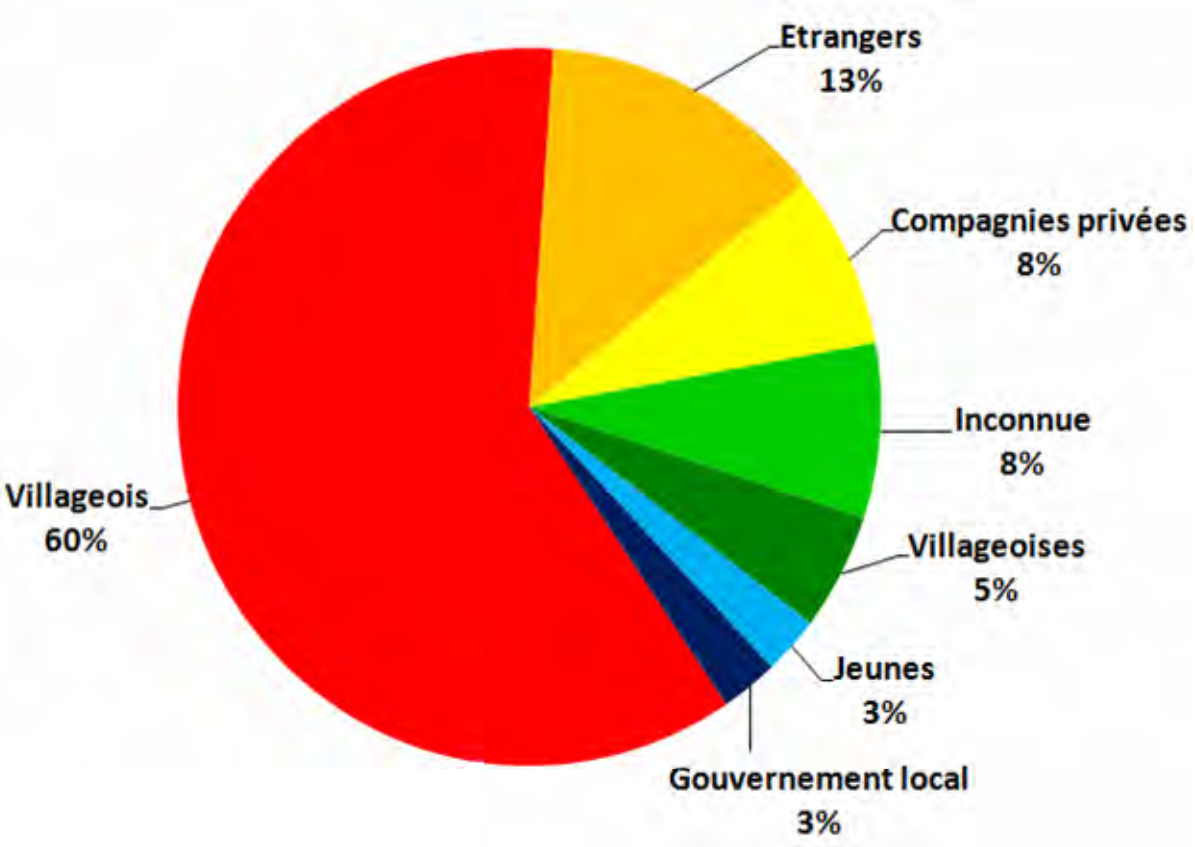
DJOEZI

MENACES

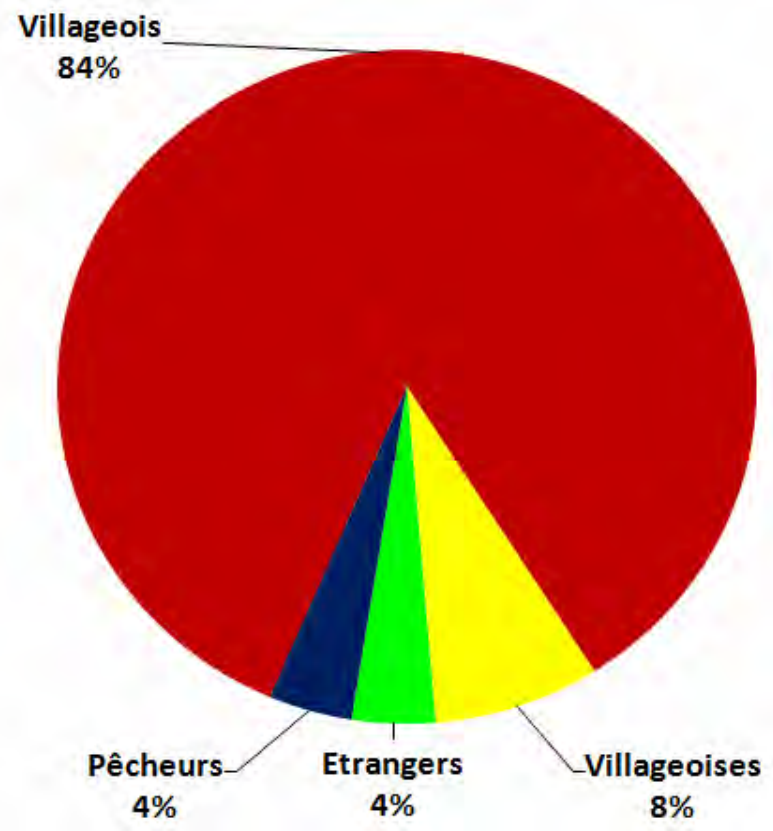


RESPONSABLES

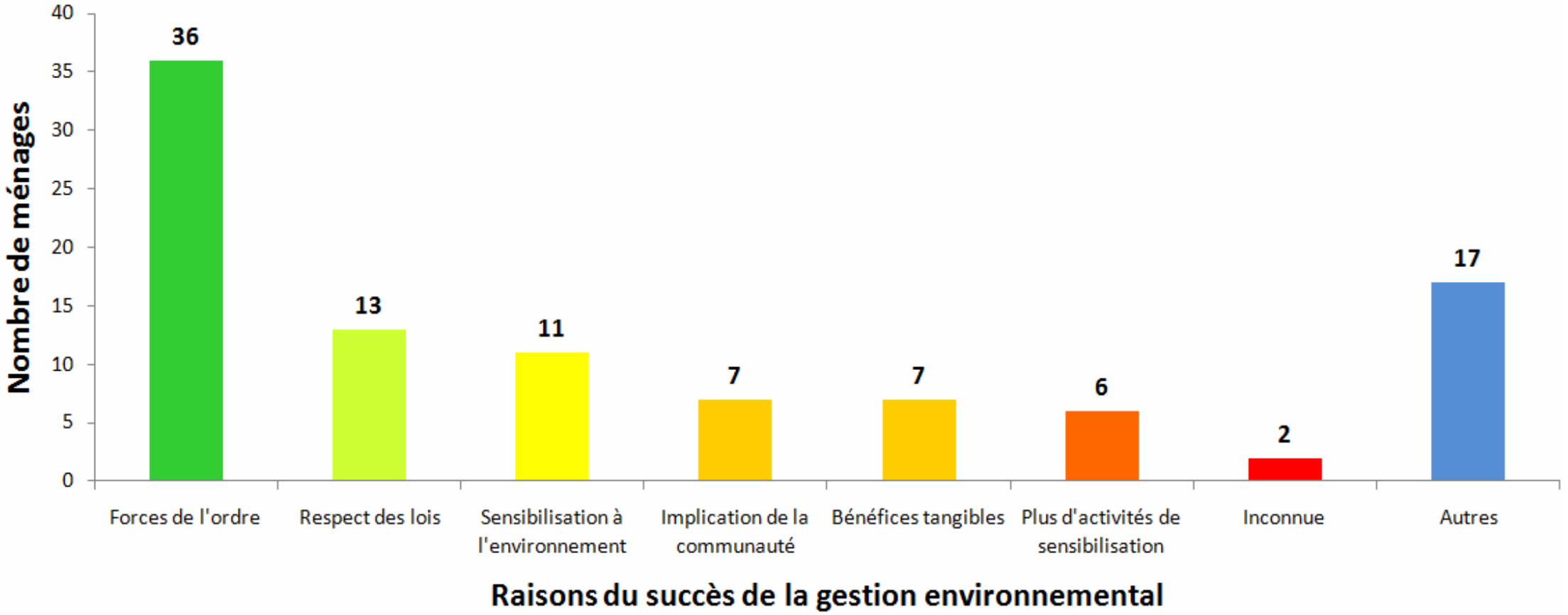
Extraction de sable et de graviers



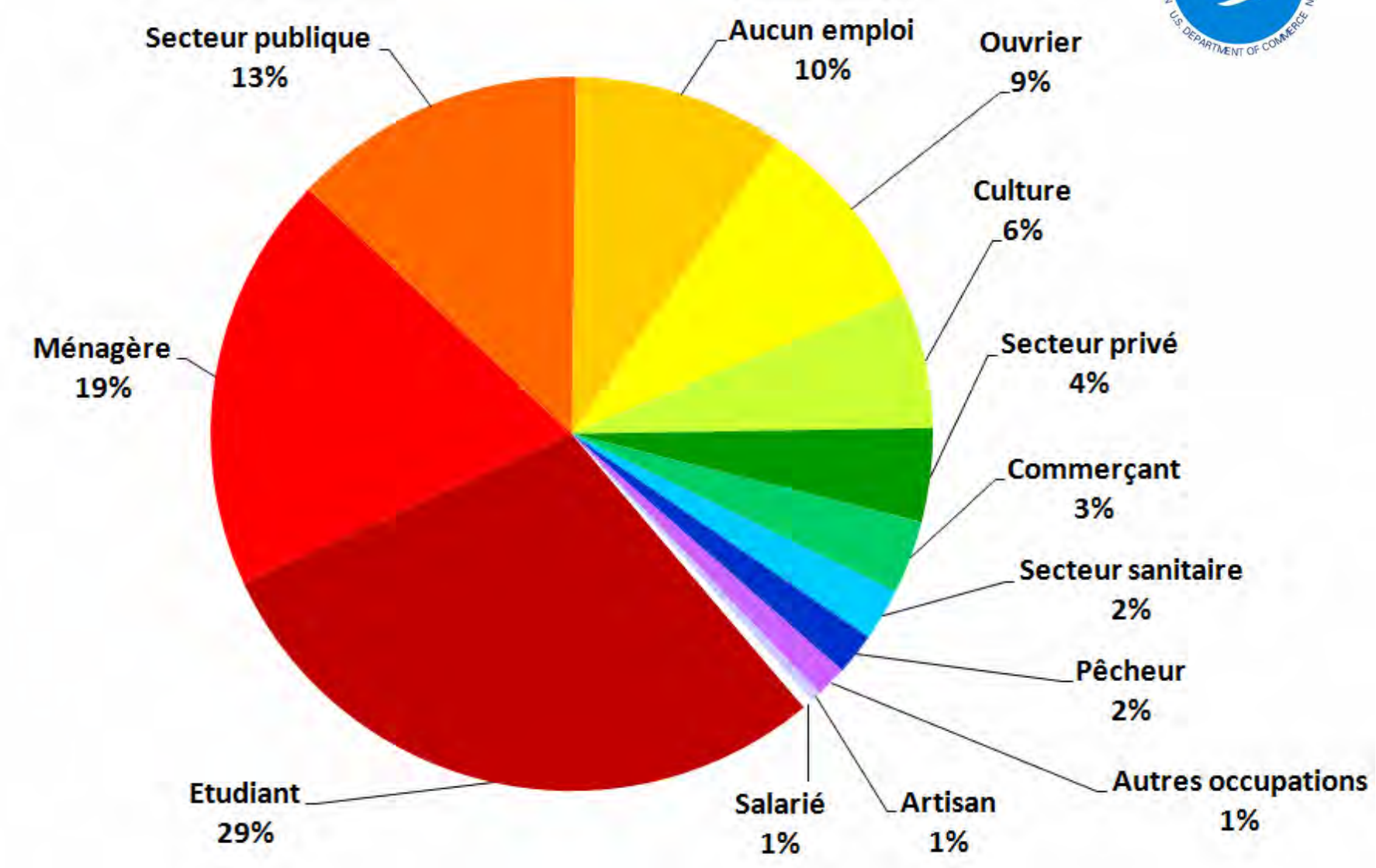
Dépôt d'ordures



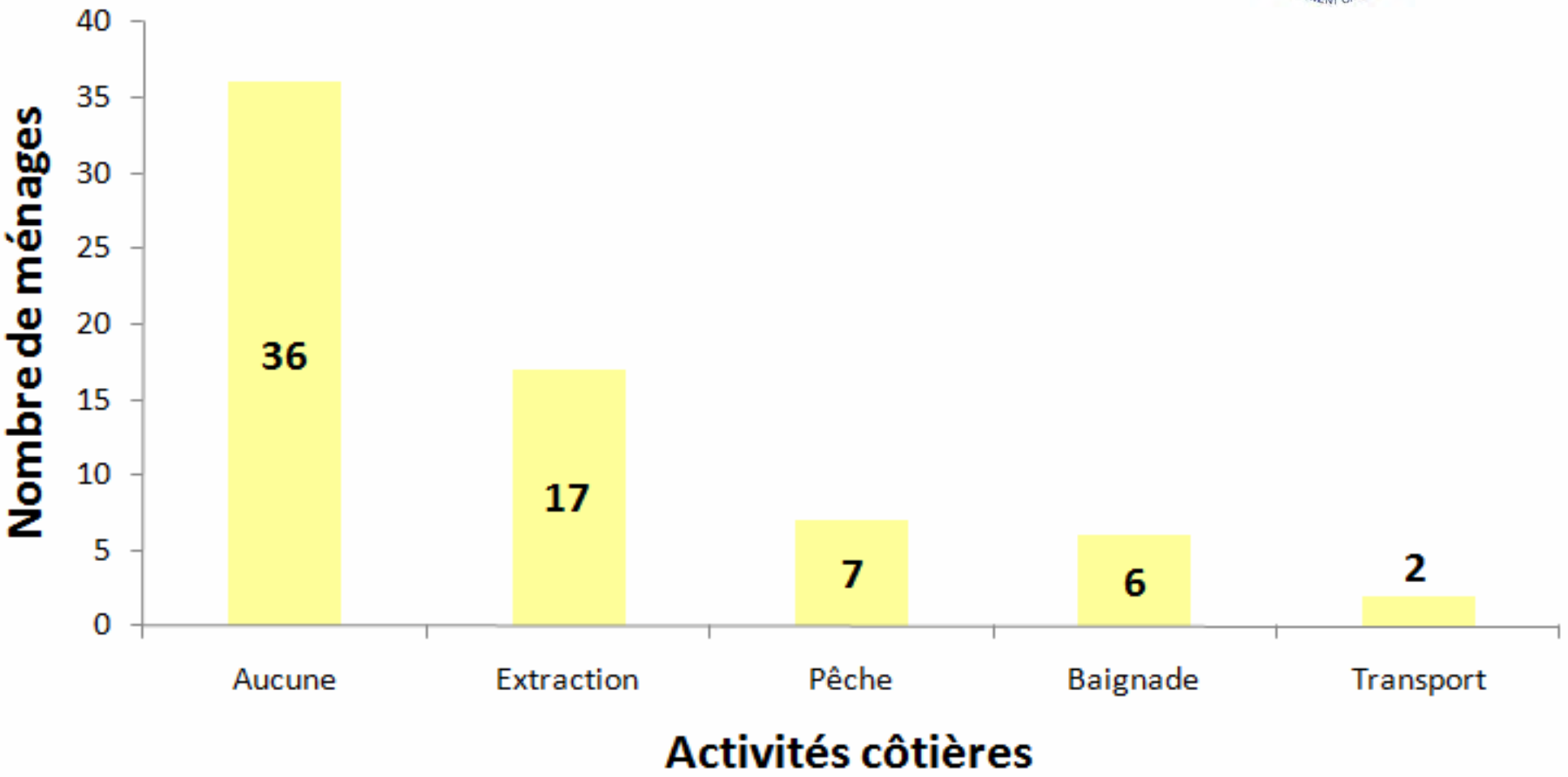
RAISONS DU SUCCES DE LA GESTION ENVIRONNEMENTALE



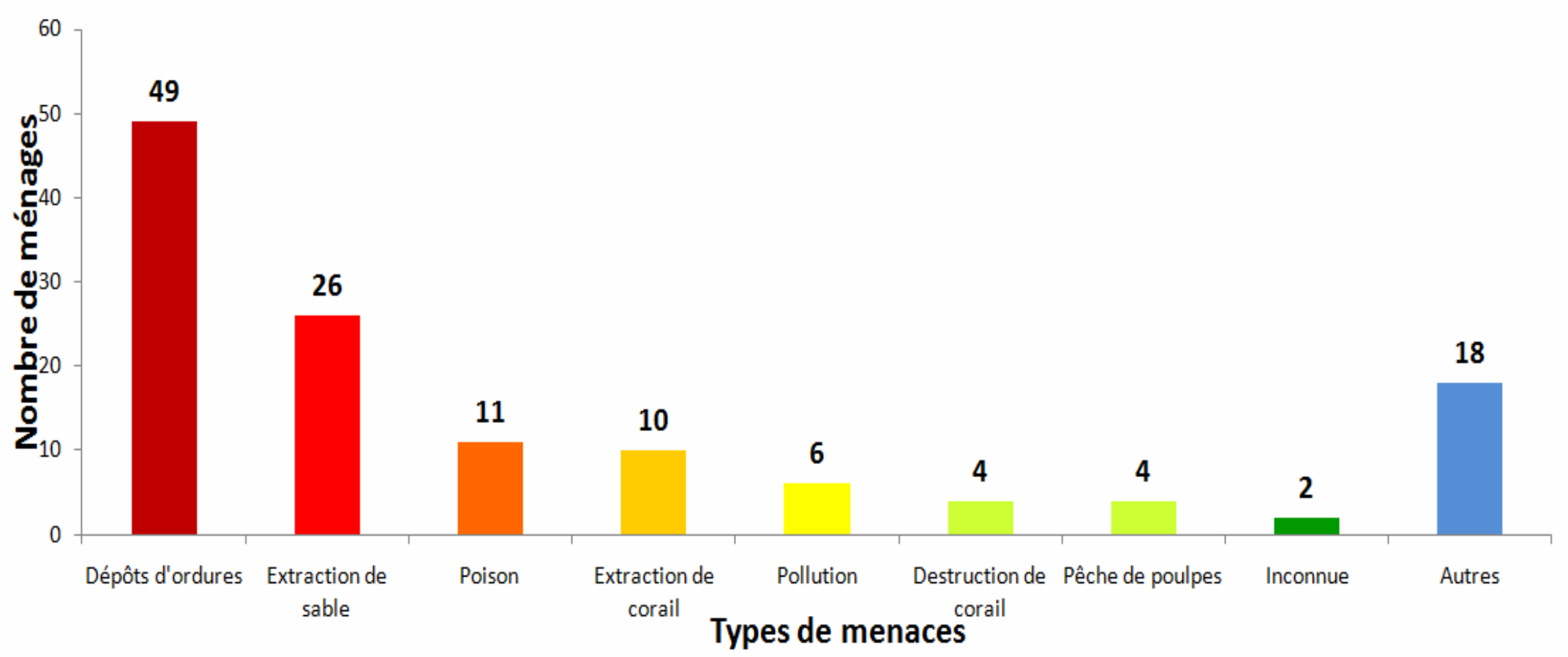
EMPLOIS


Secteur publique
13%
Aucun emploi
10%
Ouvrier
9%
Culture
6%
Secteur privé
4%
Commerçant
3%
Secteur sanitaire
2%
Pêcheur
2%
Autres occupations
1%
Artisan
1%
Salarié
1%
Etudiant
29%
Ménagère
19%

ACTIVITES COTIERES

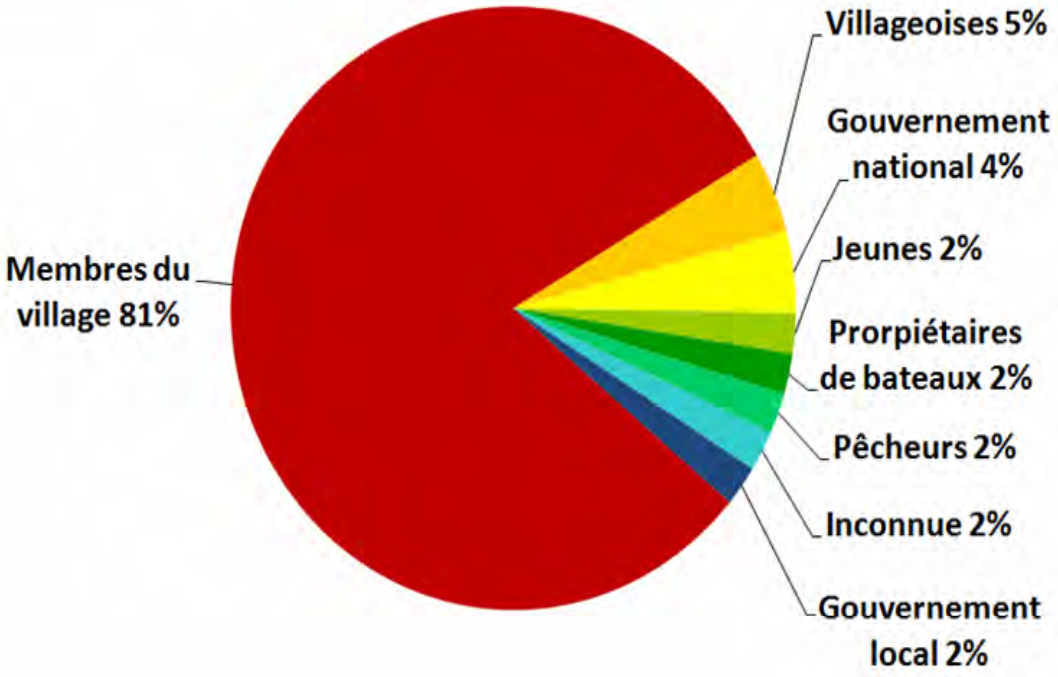


MENACES

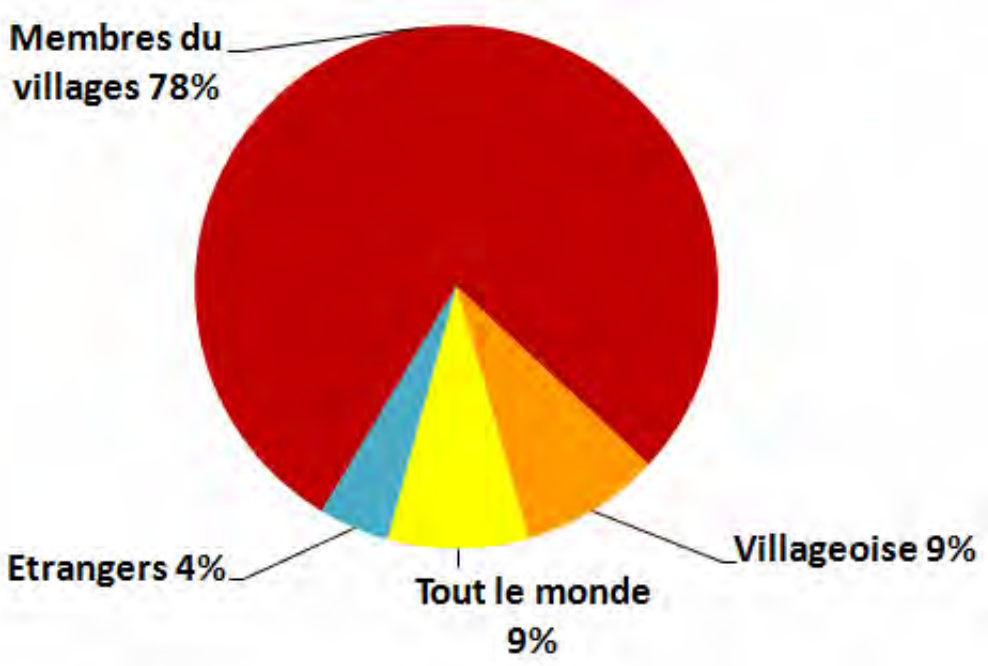

60
50
40
30
20
10
0
Nombre de ménages
49
26
11
10
6
4
4
2
18
Dépôts d'ordures
Extraction de sable
Poison
Extraction de corail
Pollution
Destruction de corail
Pêche de poulpes
Inconnue
Autres
Types de menaces

RESPONSABLES

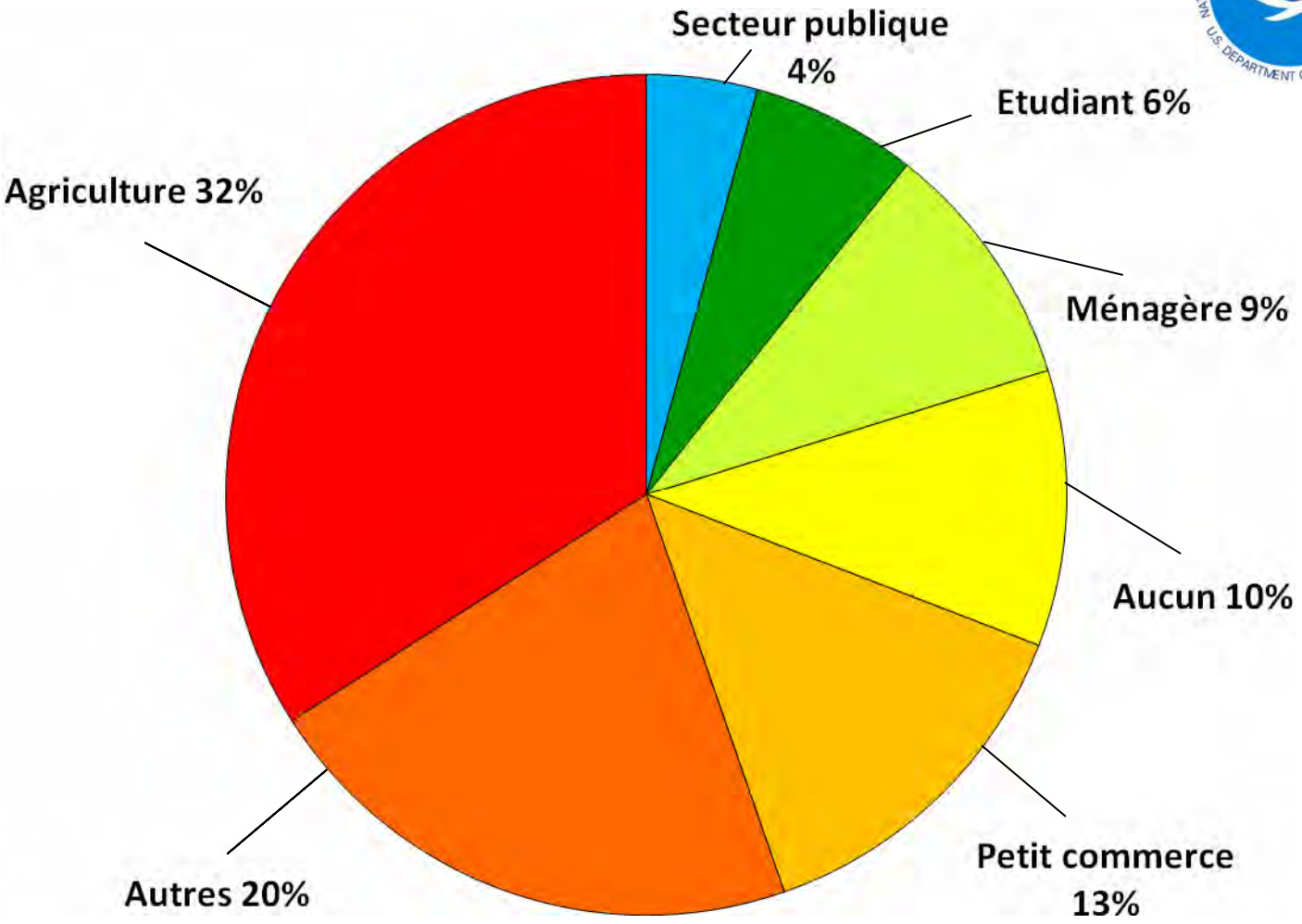
Dépôts d'ordures



Extraction de sable

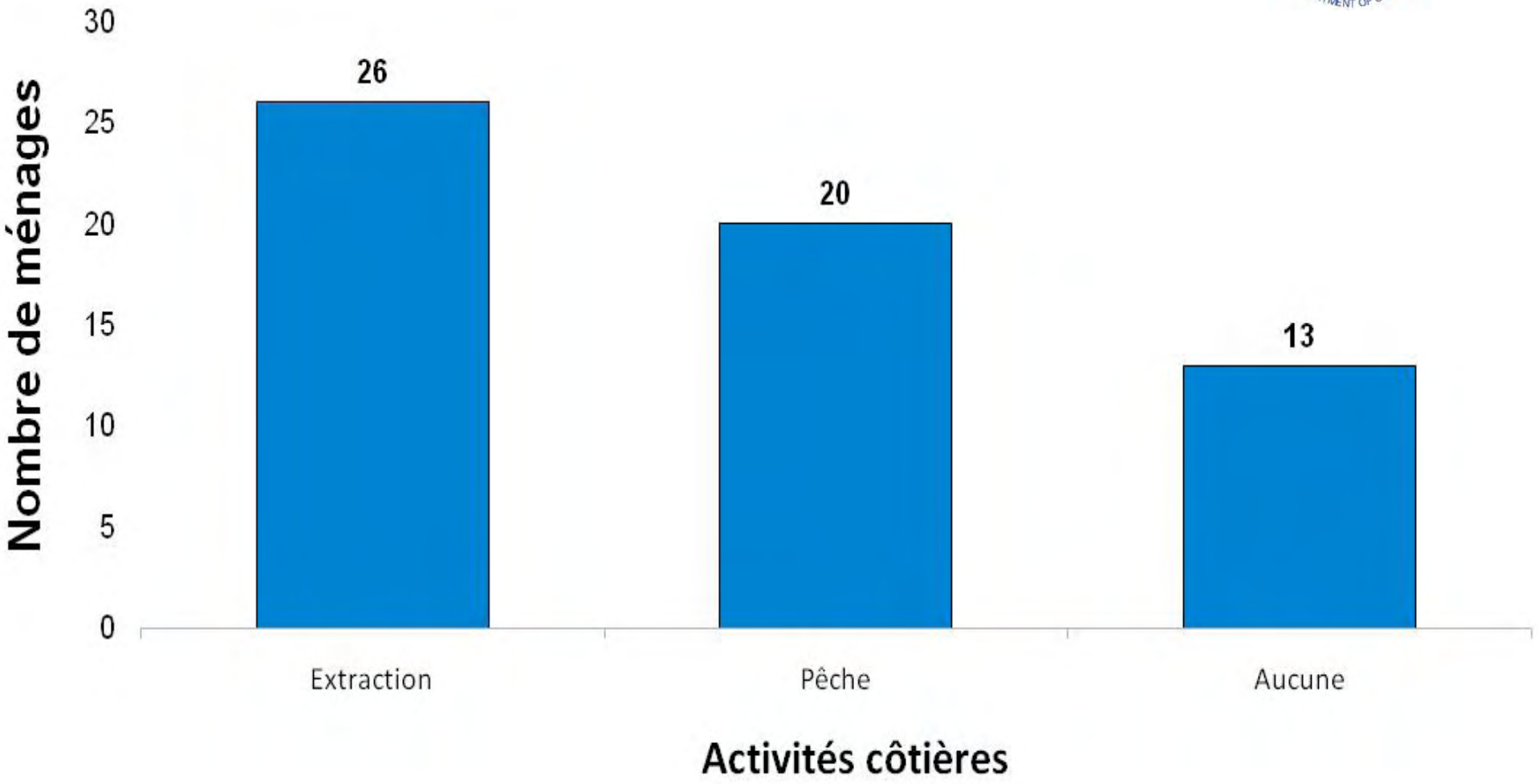


Emplois


Secteur publique 4%
Etudiant 6%
Ménagère 9%
Aucun 10%
Petit commerce 13%
Autres 20%
Agriculture 32%

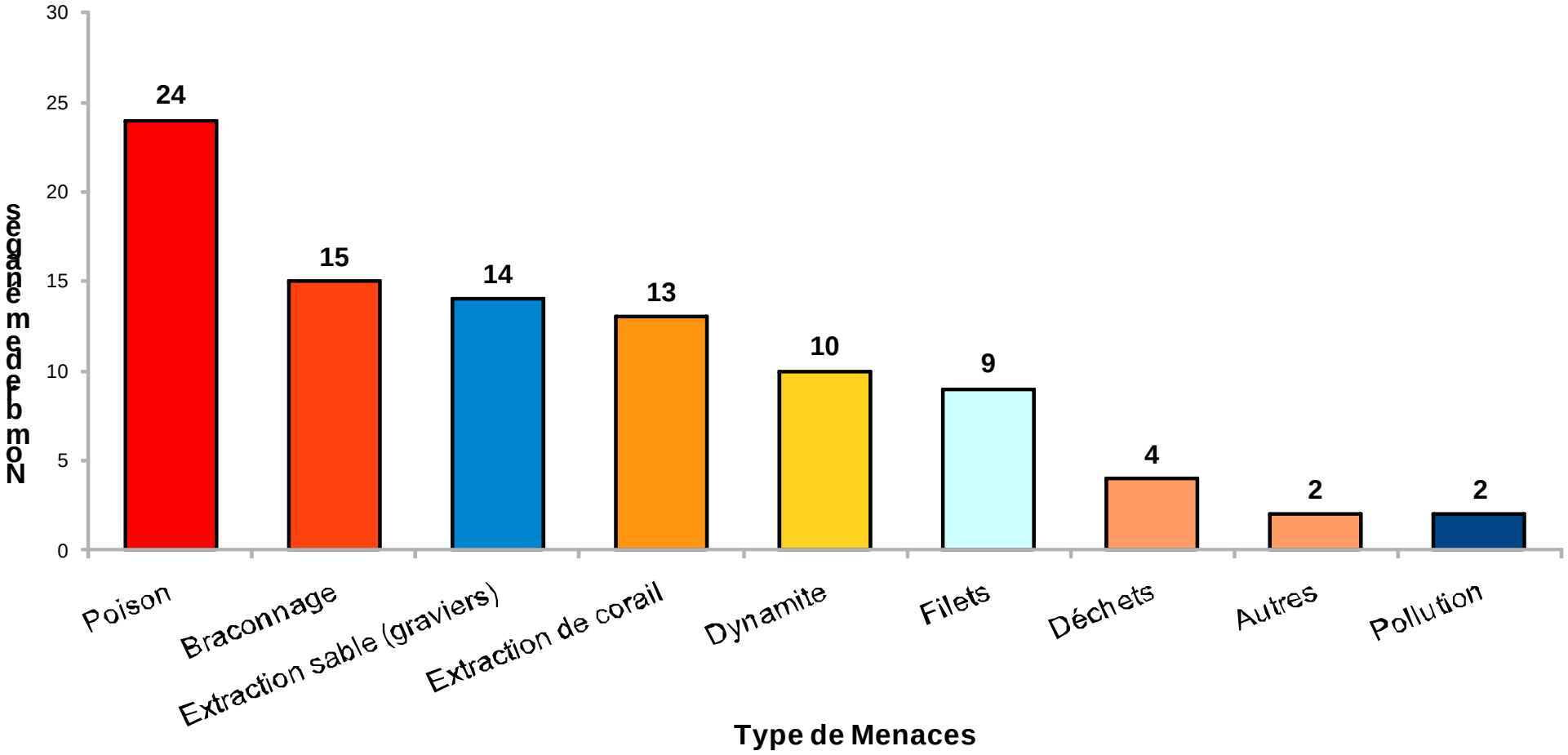
HAMBA

Activités côtières



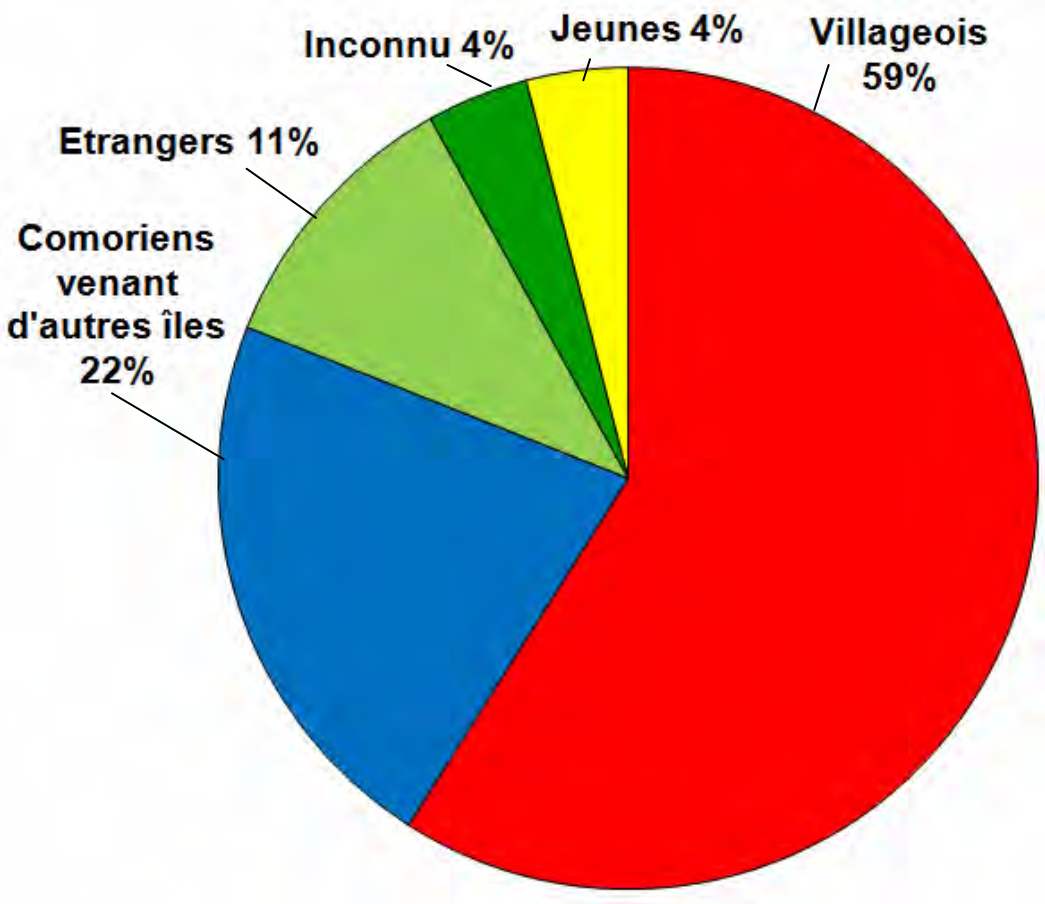
HAMBA

Menaces

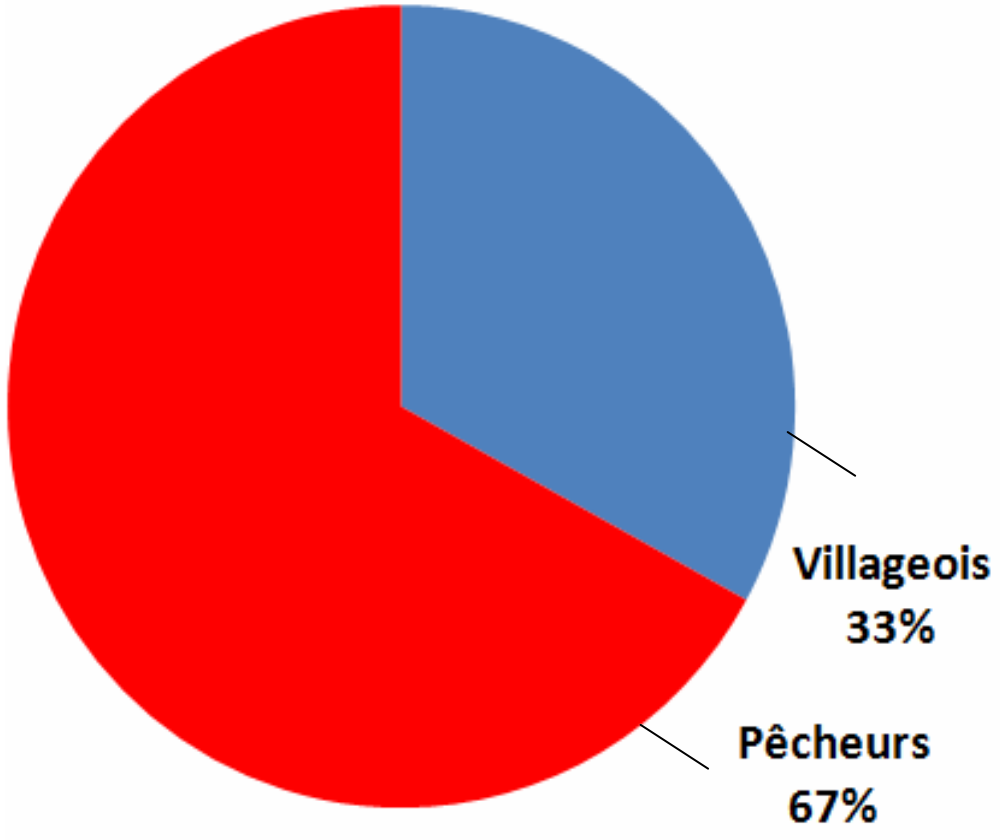


Responsables

Extraction sable (graviers, corail)

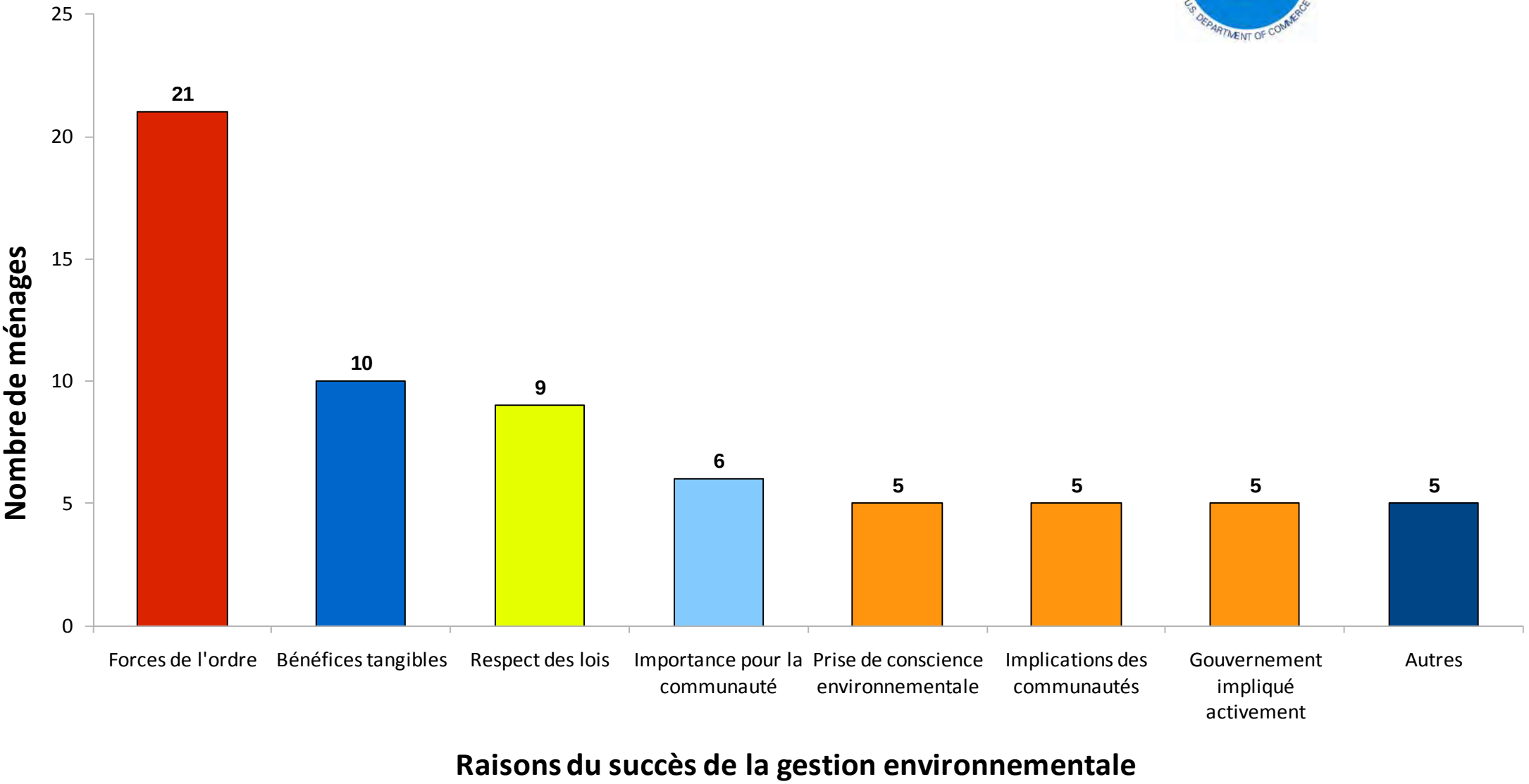


Poison

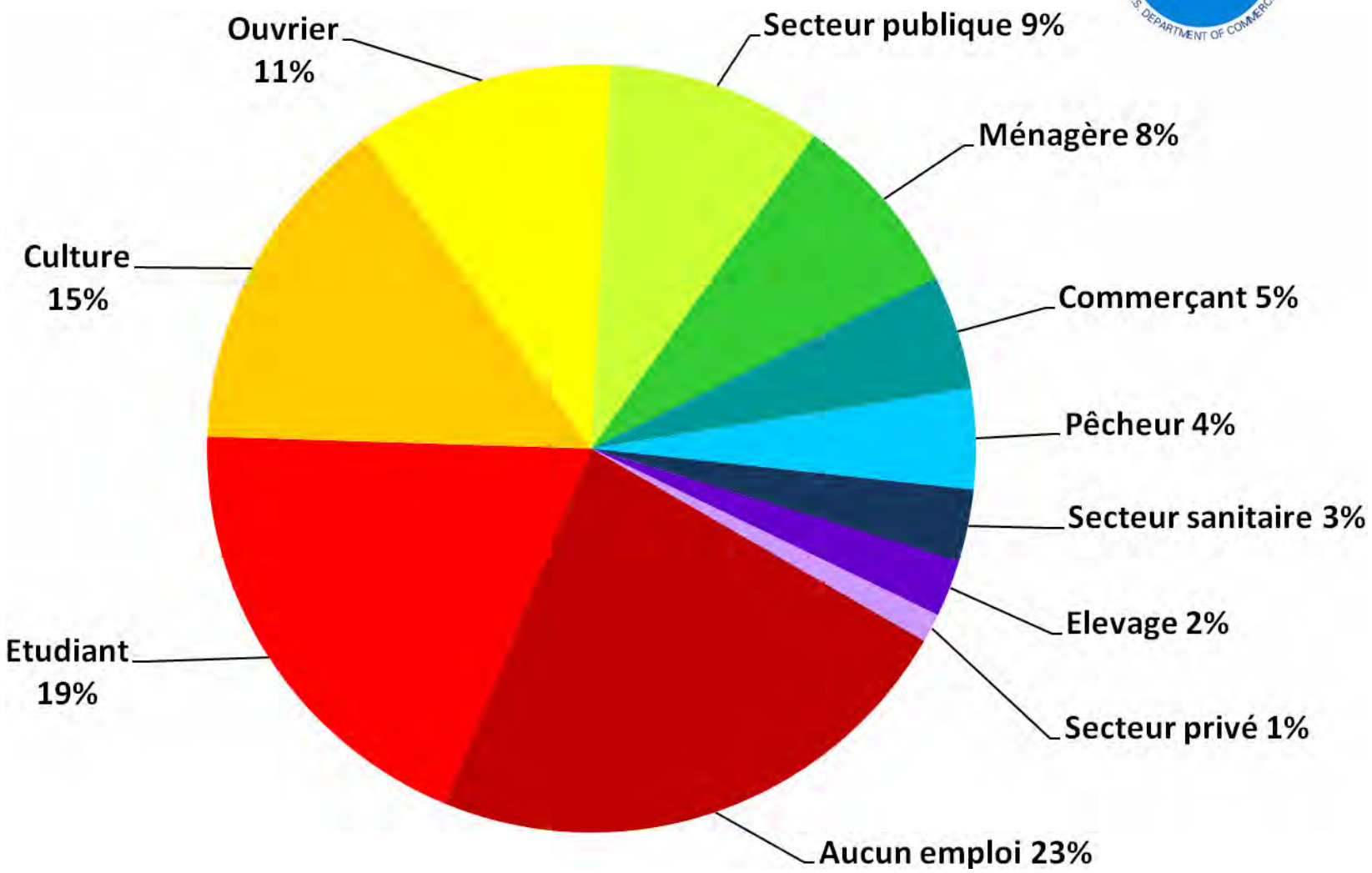


HAMBA

Raisons du succès de la gestion environnementale

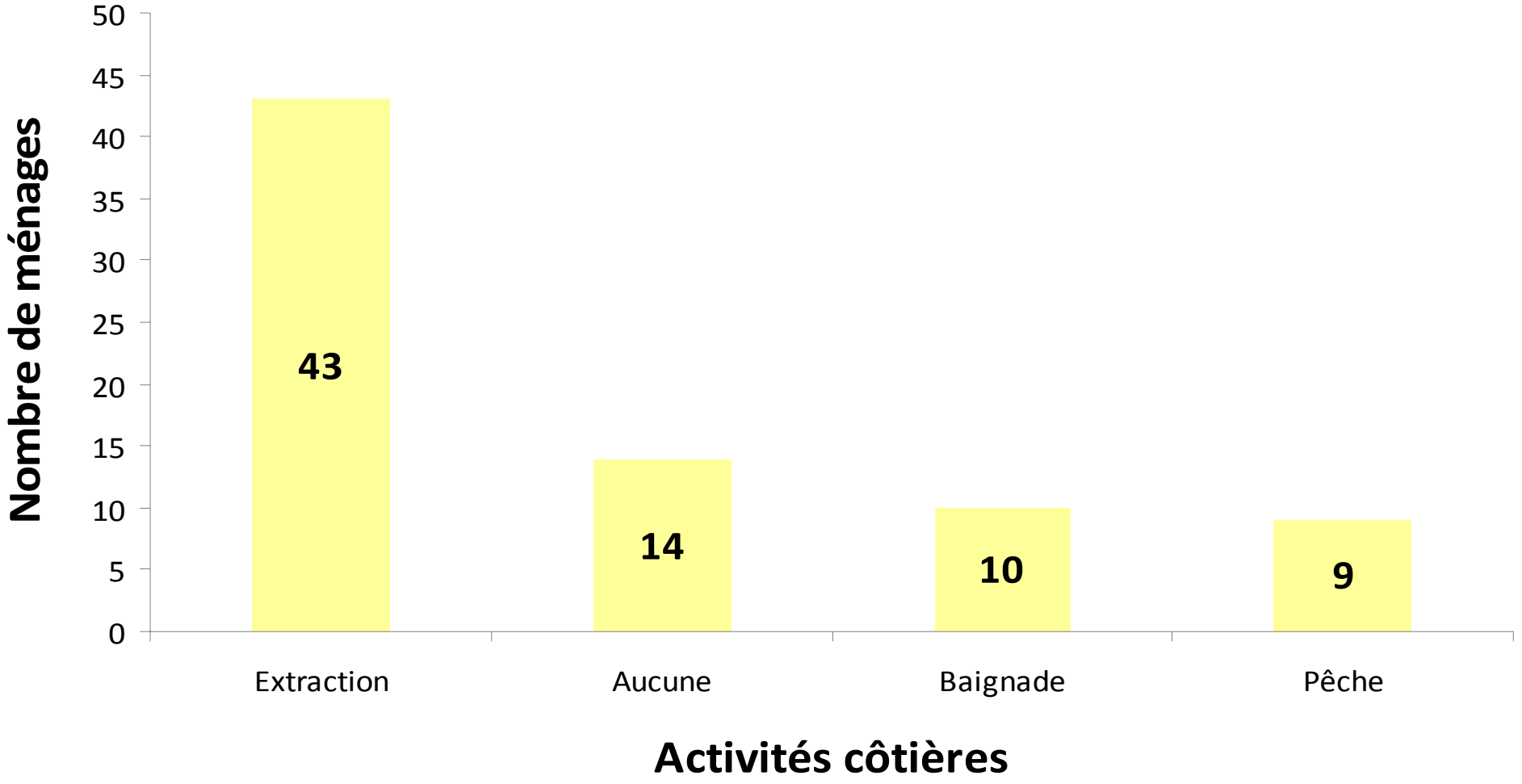


EMPLOIS


Ouvrier 11%
Secteur publique 9%
Ménagère 8%
Culture 15%
Commerçant 5%
Pêcheur 4%
Secteur sanitaire 3%
Elevage 2%
Etudiant 19%
Secteur privé 1%
Aucun emploi 23%

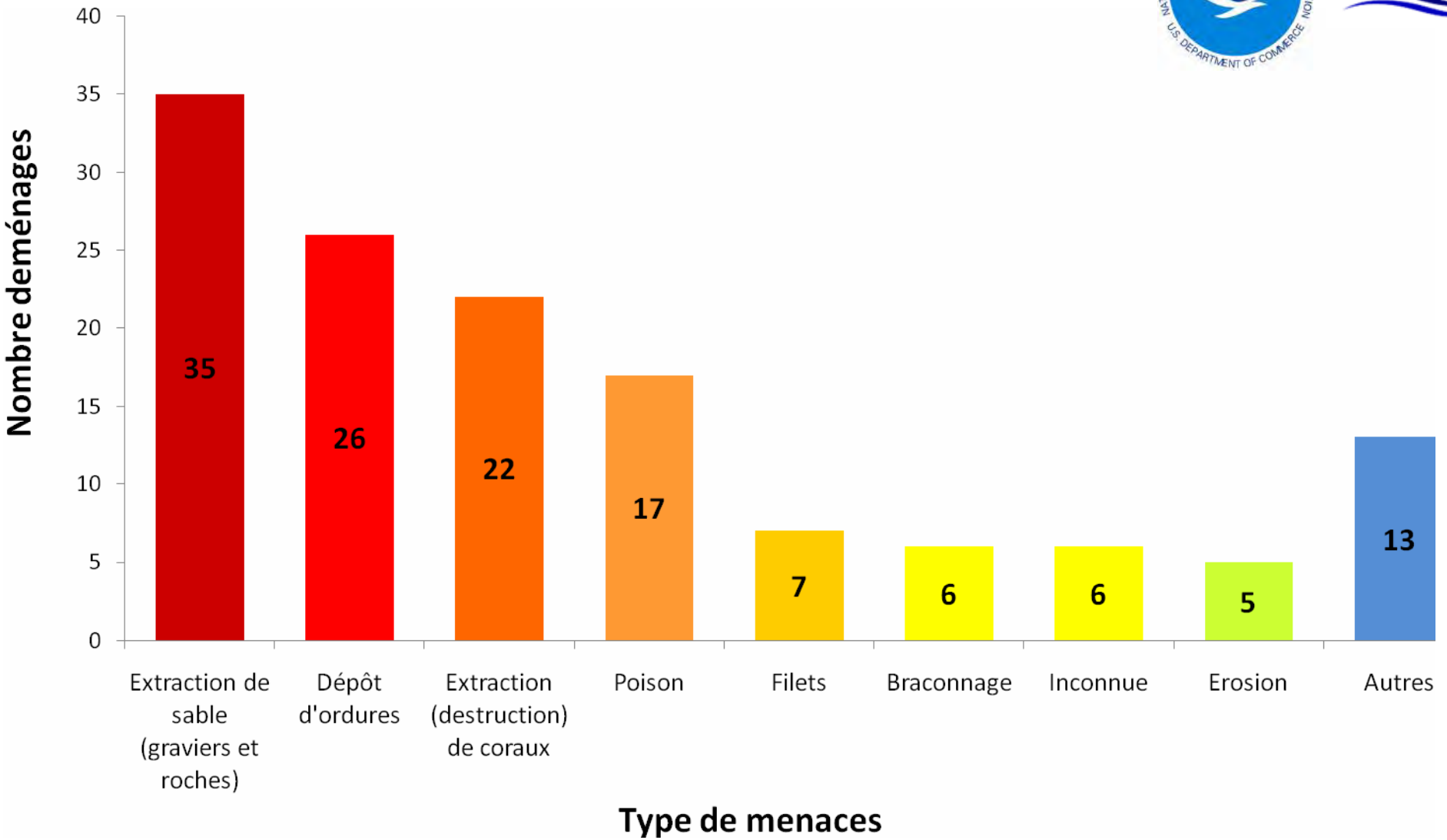
HOANI

ACTIVITES COTIERES



HOANI

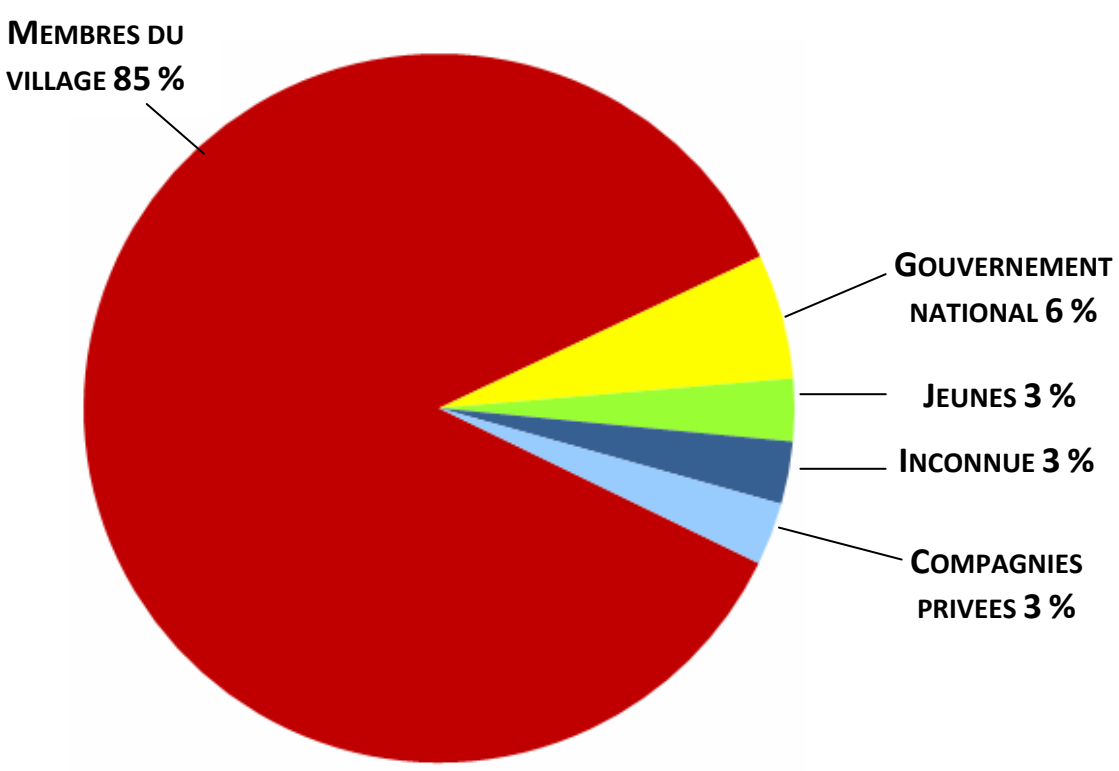
MENACES



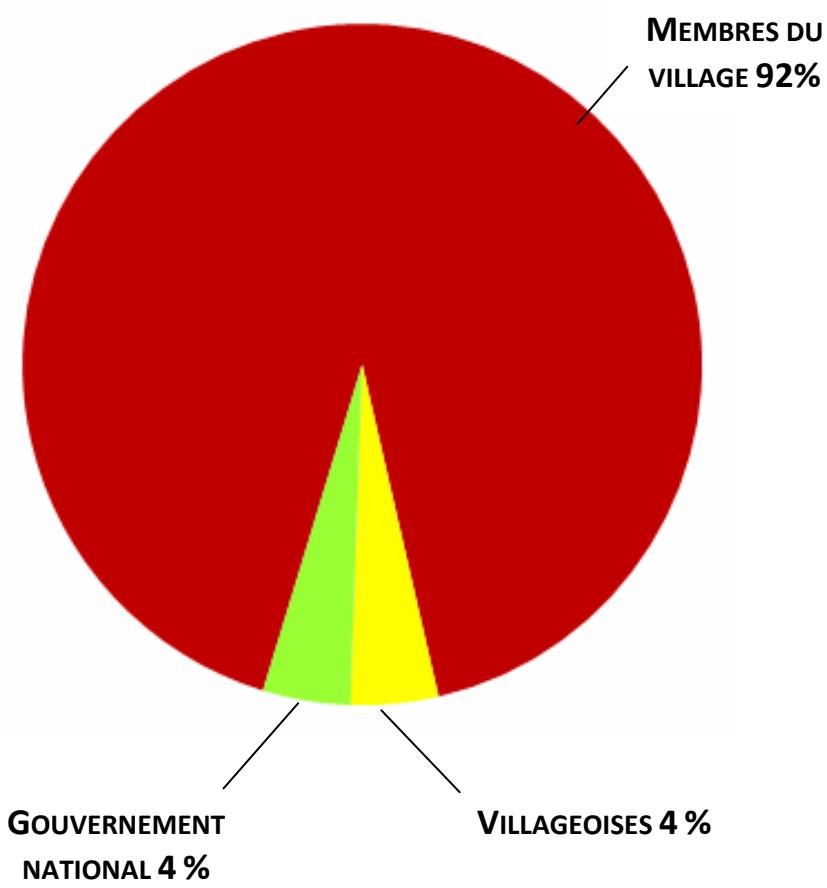
HOANI

RESPONSABLES

Extraction sable (pierres/graviers)



Dépôt d'ordures



HOANI

RAISONS DU SUCCES DE LA GESTION ENVIRONNEMENTALE

