

*Contextes institutionnels et sensibilité à la question de la biodiversité
par les acteurs publics et privés du territoire Bassin Minier de Provence.*

The case of the red muds disposal and the biodiversity issue

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Framework

- **General research programme:**
- - How biodiversity concerns enter public and private decisions?
- - Which institutional arrangements are adapted to efficient biodiversity management?
- What are the drivers of biodiversity concerns in public and private decisions?
- What are the brakes?
- How is the scientific knowledge pertaining to biodiversity diffused and used among decision-makers and institutions (public government, entreprises, associations, media...)
- **Method: case studies**
- OMH-BMP study : Alteo
- **Data: records of historical decisions, reports, speeches, opinions,**



Context and Historical Landmarks

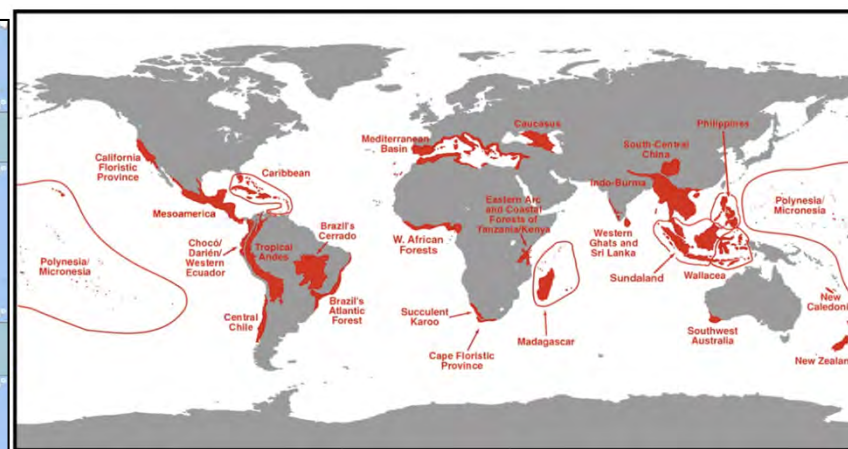
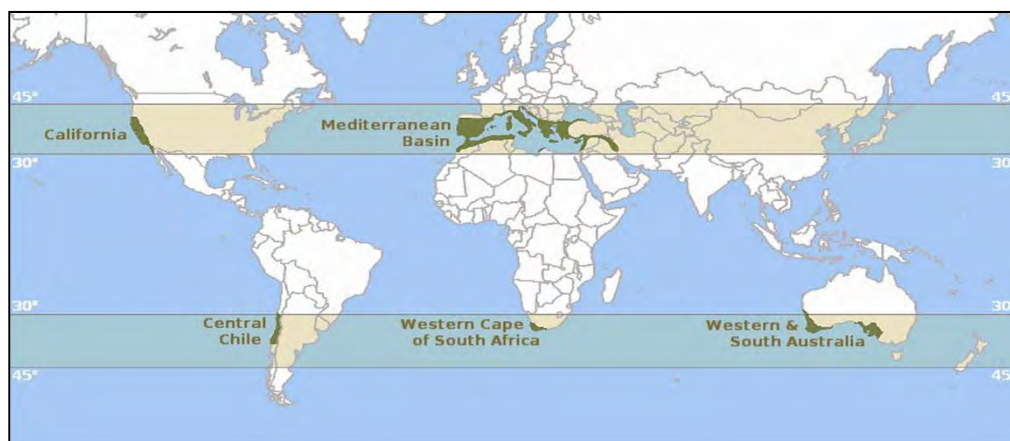


MEDITERRANEAN REGION HOTSPOT OF BIODIVERSITY

a) are characterized by exceptional concentrations of species with high levels of endemism

-b) are experiencing unusually rapid rates of depletion"

(Myers, 1988), (Myers et al., 2000, 2003).



Protection of the Mediterranean Sea BARCELONA CONVENTION

Convention for the Protection of the Mediterranean Sea against Pollution (1976), amended as Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (1995) and dumping convention and protocols (2002, ...), Hazardous wastes protocole (1996); ICZM Protocol (2008)



| Contracting Parties | 1976 Barcelona Convention - 1/ | | | | 1976 Dumping Protocol - 2/ | | | 1976 Emergency Protocol - 3/ | | |
|---------------------|--------------------------------|--------------|-------------------------------|--------------------|----------------------------|--------------|-------------------------------|------------------------------|--------------|--------------------|
| | Signature | Ratification | Acceptance of 1995 Amendments | Entered into force | Signature | Ratification | Acceptance of 1995 Amendments | Signature | Ratification | Entered into force |
| France | 16.02.76 | 11.03.78/AP | 29.03.01 | 09.07.04 | 16.02.76 | 11.03.78/AP | 29.03.01 | 16.02.76 | 11.03.78/AP | 10.04.78 |

The Dilemma Yesterday and Today

2 major decisions to be made

- License for rejection of the leachate
- License for stacking the muds in a proprietary site of Alteo

Two major institutional events:

- Creation of the Parc National des Calanques
- Creation of the « Métropole Aix-Marseille »



Marine biodiversity



Definition: A **leachate** is a liquid that, in the course of passing through matter, extracts soluble or suspended solids, or any other component of the material through which it has passed.

In the case of Alteo : 35mg/l of suspension in a water with Ph13

Land biodiversity

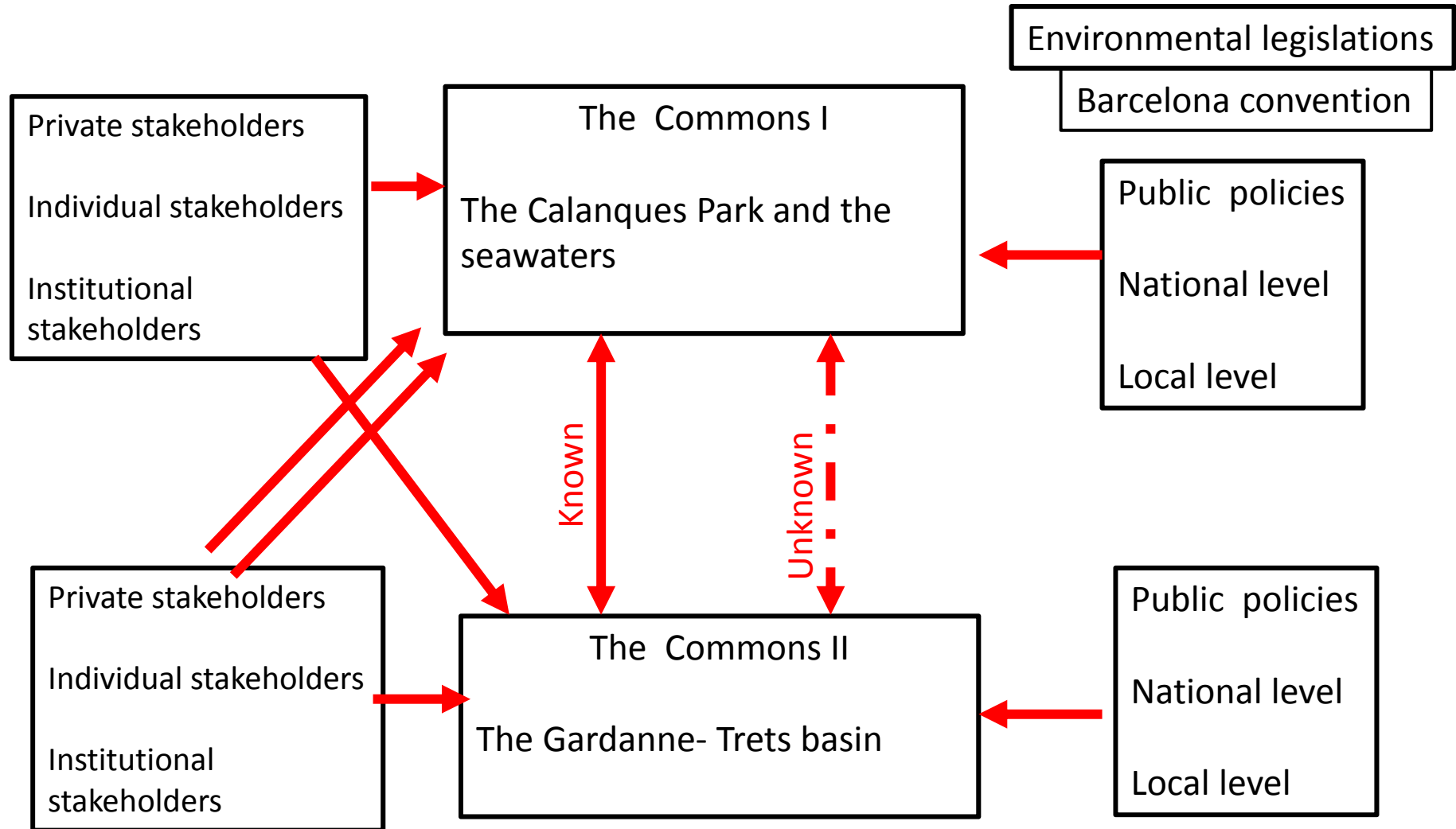
Research conduct

- 1) Identification of the « stakeholders »
- 2) Institutional channels through which they are involved
- 3) Recording and sorting out the stakeholders' expression about the project

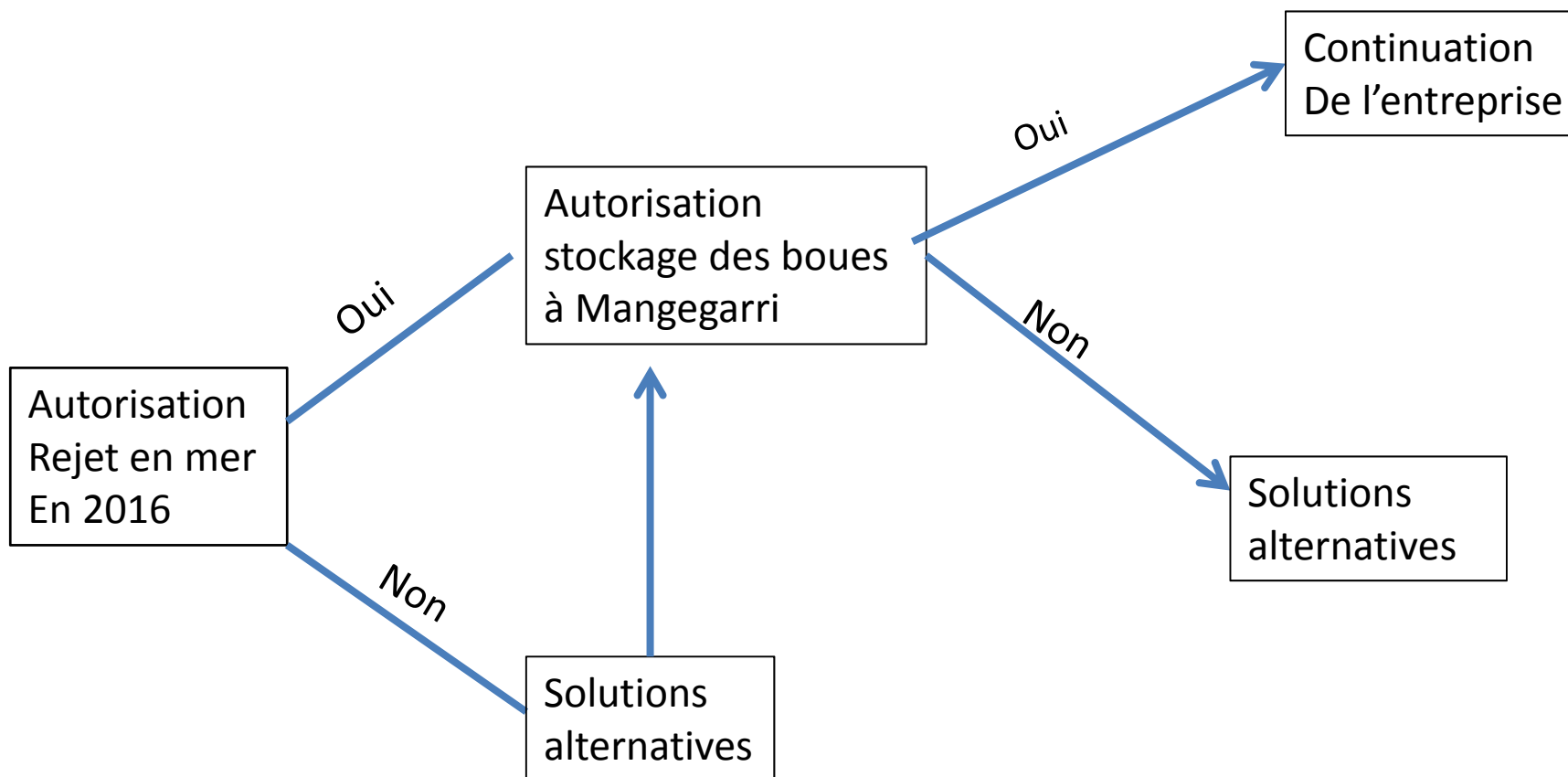
Hypotheses concerning the stakeholders posture about the project as determined by several variables:

- type on interest in the project
- Institutional environment of the stakeholder
- Distance to the sites
- expertise about the project

decisional and institutional model Model



Interactions des décisions Site Gardanne-Trets et site des Calanques



Data package 1 : key public and private decisions (*excerpt*)

| | |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2013 | Prefectoral decree (AP, 2013). Plan Protection de l'Air (PPA) for the department of Bouches-du-Rhône of May 17, 2013. A PPA Monitoring Committee shall be established. The committee will be composed of four colleges of the services of the state, communities, nature protection associations, representing the economic sector and qualified individuals. |
| 2013 | Arrêté préfectoral imposant des prescriptions complémentaires à la société Altéo Gardanne dans le cadre du changement d'exploitant de l'usine d'alumine Gardanne. |
| 2013 | Société Altéo Gardanne. Etude sur l'évaluation des risques sanitaires liés aux émissions atmosphériques du site de MangeGarri. |
| 2013 | Société Alcan Aluminium Pechiney à Gardanne. Arrêté complémentaire relatif aux émissions d'oxyde d'azote issues du site. |
| 2014 | Le groupe, a investi 15M d'euros dans un deuxième filtre-presse. Et il vient de lancer, pour 12M d'euros les travaux d'un troisièmeme filtre-presse. |
| 2014 | Mettre les éléments du Parc National et demande autorisation prolongation arejet eaux de lessivage +avis enquête publique... Enquêtes, rapports Anses, BRGM, IFREMER |
| 2014 | Résumé non technique de l'étude d'impact |
| 2014 | Société Alcan Aluminium Pechiney à Gardanne. Arrêté complémentaire relatif aux émissions d'oxyde d'azote issues du site. |
| 2014 | Société Altéo Gardanne. Etude sur les rejets actuels des résidus (sol et mer). |
| 2014 | Société Alcan Aluminium Pechiney à Gardanne. Avis unique de l'autorité environnementale concernant les installations classées pour la protection de l'environnement et concession d'occupation domaine public maritime. |
| 2014 | Société Altéo Gardanne. Etude sur les rejets actuels des résidus (sol et mer). |
| 2014 | Modification des conditions d'exploiter une installation classée soumise à autorisation, mise en œuvre d'un filtre presse supplémentaire et des équipements. |
| 2014 | Arrêté portant prescriptions complémentaires à la société Altéo Gardanne dans le cadre de la mise en place d'un filtre presse n°3 et de ses équipements sur le site de stockage de déchets de résidus minéraux à Mangegarri. |

Data package 2 : public and private reports, expressed opinions and media reports

ID de la réponse

Opinion générale du message (vis à vis du projet)

Identifiez vous dans le menu déroulant

Concerne :

Nom du Stakeholder (Ego) [S1]

Niveau relationnel du stakeholder par rapport à l'organisation (Savage et al. 1991)

Catégorie stakeholder : (1 primaire ou 2 secondaire) (Caroll, 1989; Clarkson, 1995)

Type de Stakeholder

Type de Stakeholder - comment

Position "à priori" du stakeholder (ajouter un commentaire si besoin) adapté de Savage et al. 1991

Position "à priori" du stakeholder (ajouter un commentaire si besoin) adapté de Savage et al. 1991 - comment

Type de communication

Type de communication - comment

Date de la communication : analyse dynamique et processuelle des décisions stratégiques (Mintzberg, 1976 ; Porter, 1991), identification de l'émergence de nouvelles propriétés intervenant dans le système complexe (Goldstein, 1999)

Titre du document

Emetteur du document (Ex. La Provence, Ministère de l'Environnement, ...)

Auteur du document (si renseigné).

Opinion générale du message (vis à vis du projet)

A qui s'adresse ce message- Macnamara, J. (2005), J. Milne M.J. and Adler R.W. (1995), Lépineux (2005), (target stakeholders: Mitchell et al. 1997) [Classement 1]

Echelle de diffusion [Internationale]

Echelle de diffusion [Nationale]

Echelle de diffusion [Régionale]

Echelle de diffusion [Locale]

Echelle de diffusion [Institutionnelle]

Echelle de diffusion [Individuelle]

Topics adaptés de Ernst and Ernst (1978), Zeghal, D. and Ahmed, S.A. (1990), Wiseman, J. (1982), Global Reporting Initiative 2007 [Classement 1]

Verbatim Ego





Data package 3: Interviews

Data package 4 : Questionnaire

In progress





Data treatment

120 Major decisions recorded over 60 years (half from 2000 on)

330 pieces of reports, opinions expressions, medias

Software used

Iramuteq, Tropes, Xlstat, SPSS

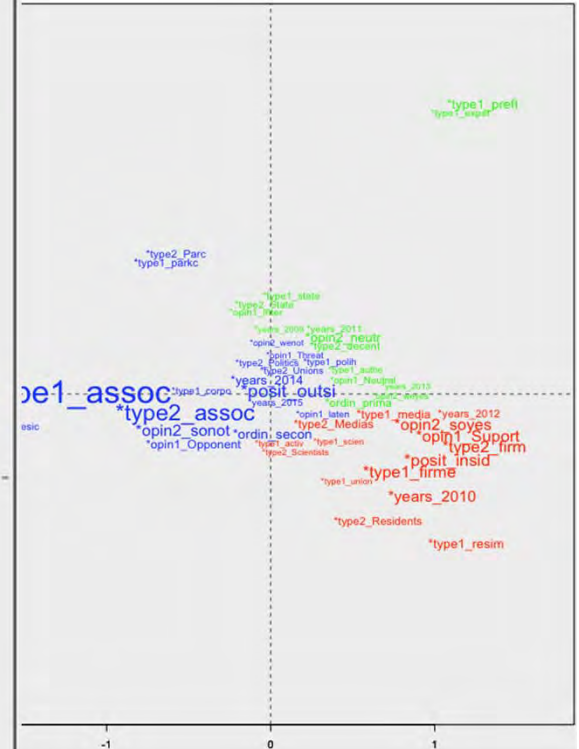
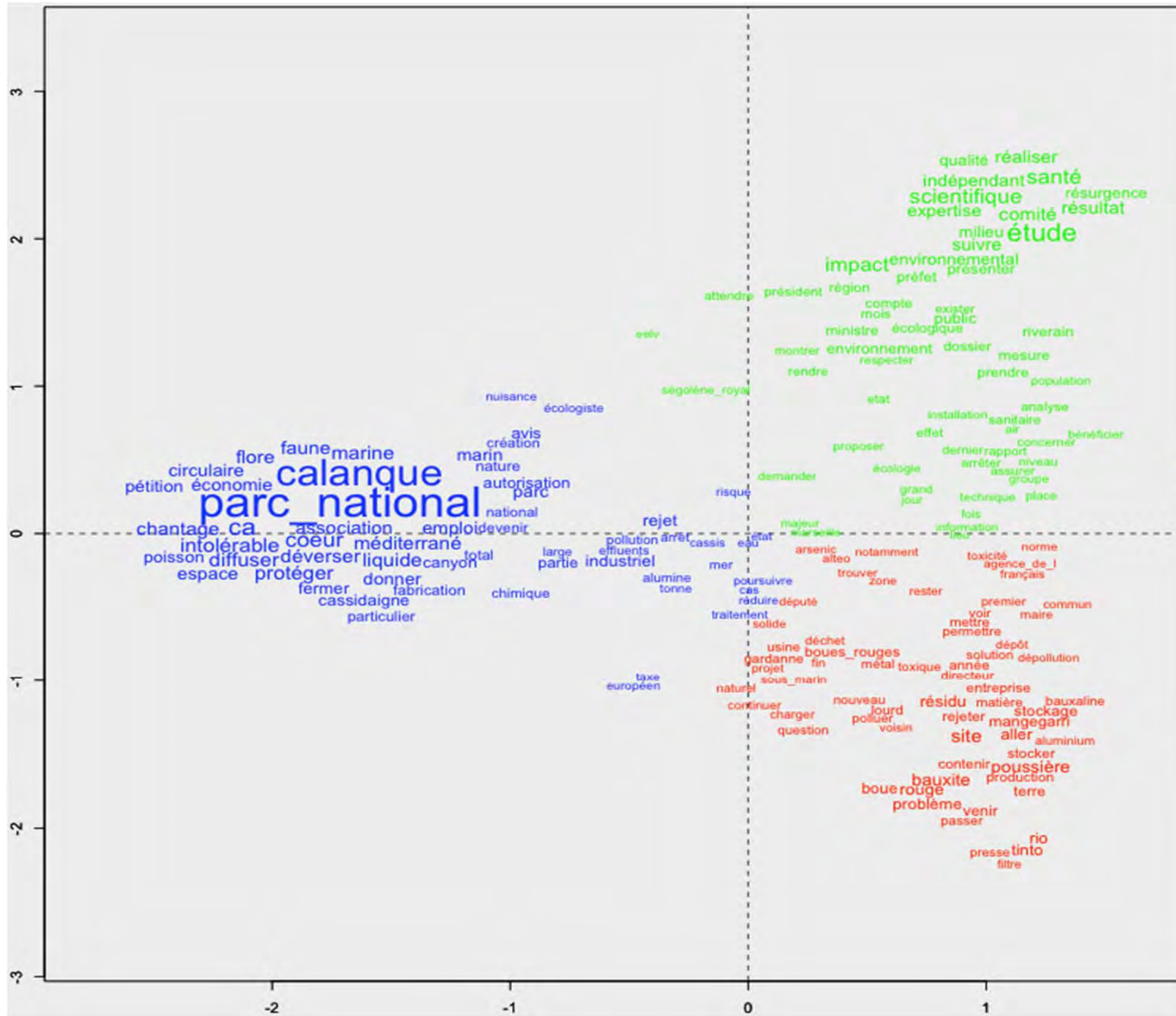


| | |
|---------------------------|-----------|
| activistes | 82 |
| associations | 33 |
| Autorités locales | 9 |
| experts | 3 |
| firme | 37 |
| medias | 50 |
| Parc | 8 |
| politiques | 53 |
| prefet | 5 |
| professionnels | 4 |
| Residents mangega. | 12 |
| Residents calanq. | 2 |
| Scientifiques | 16 |
| Etat | 17 |
| Syndicats | 3 |



Some results



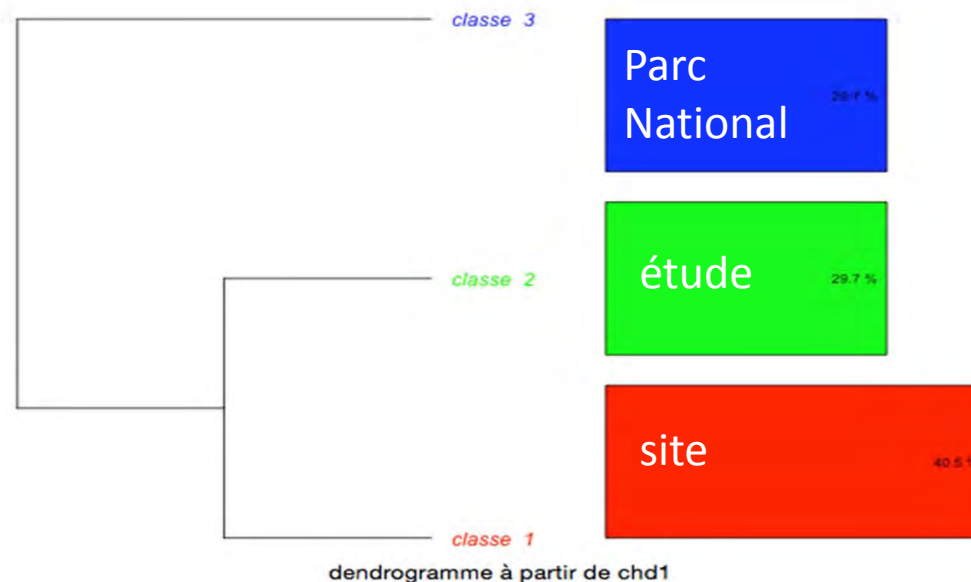


AFC

nombre de textes: 330
 nombre de segments de textes: 1503
 nombre de formes: 5322
 nombre d'occurrences: 52344
 moyenne d'occurrences par forme: 9.835400
 nombre de lemmes: 3703
 nombre de formes actives: 3315
 nombre de formes supplémentaires: 76
 nombre de formes actives de fréquence >= 25: 194
 moyenne d'occurrences par segments :34.826347
 nombre de classes : 3
 1056 segments classés sur 1503 (70.26%)

 temps d'analyse : 0h 0m 11s
 #####

Descendant Hierarchical Classification (Reinert, 1983, 1986, 1991).





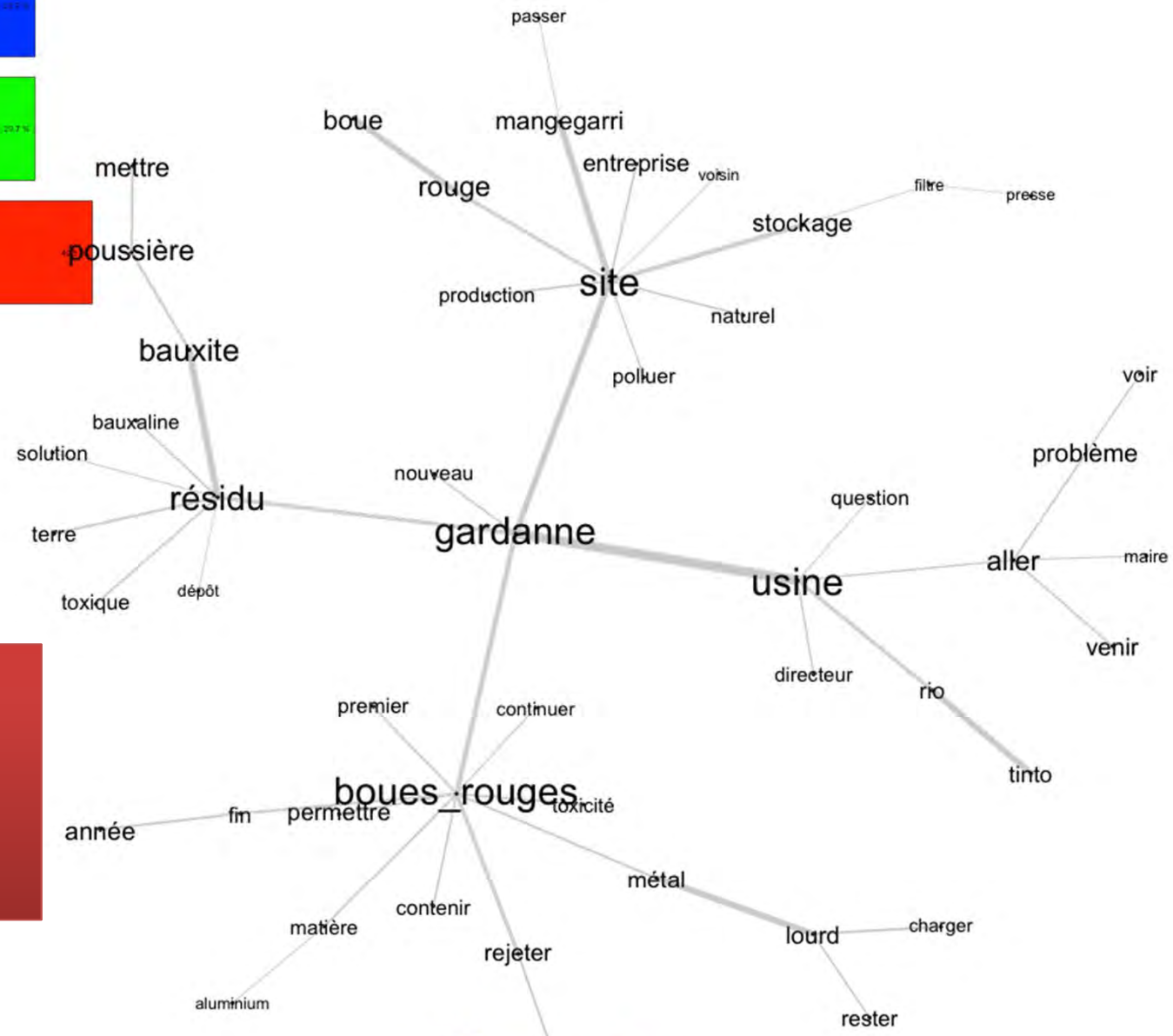
classe 3



classe 2



classe 1



**Classe1 Site
(continental
storage)**





classe 3

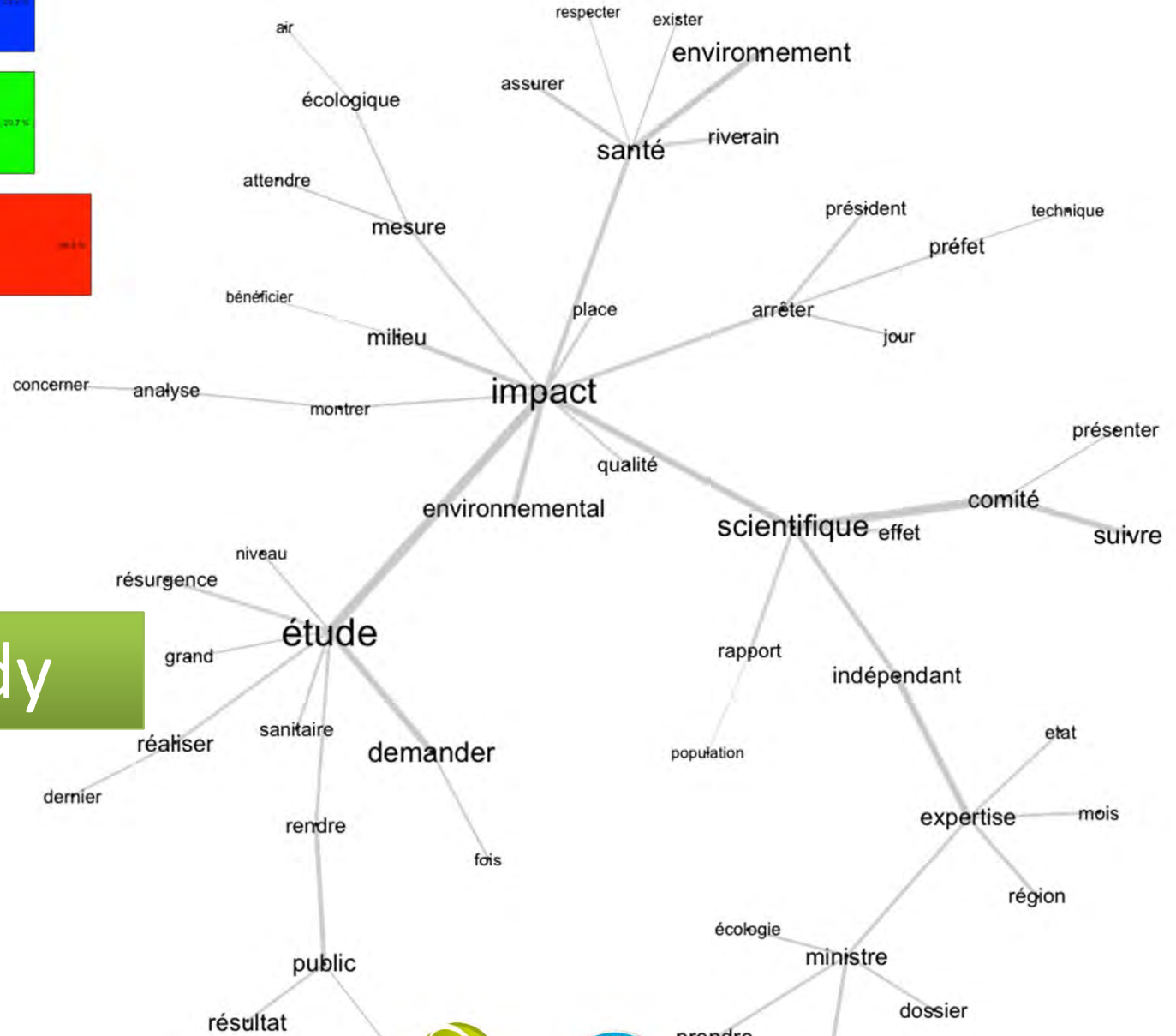


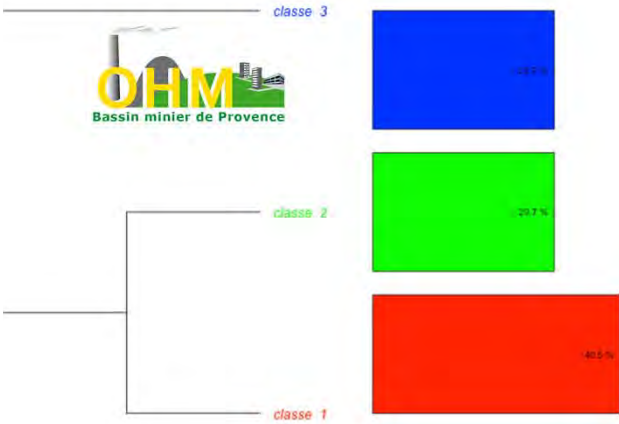
classe 2



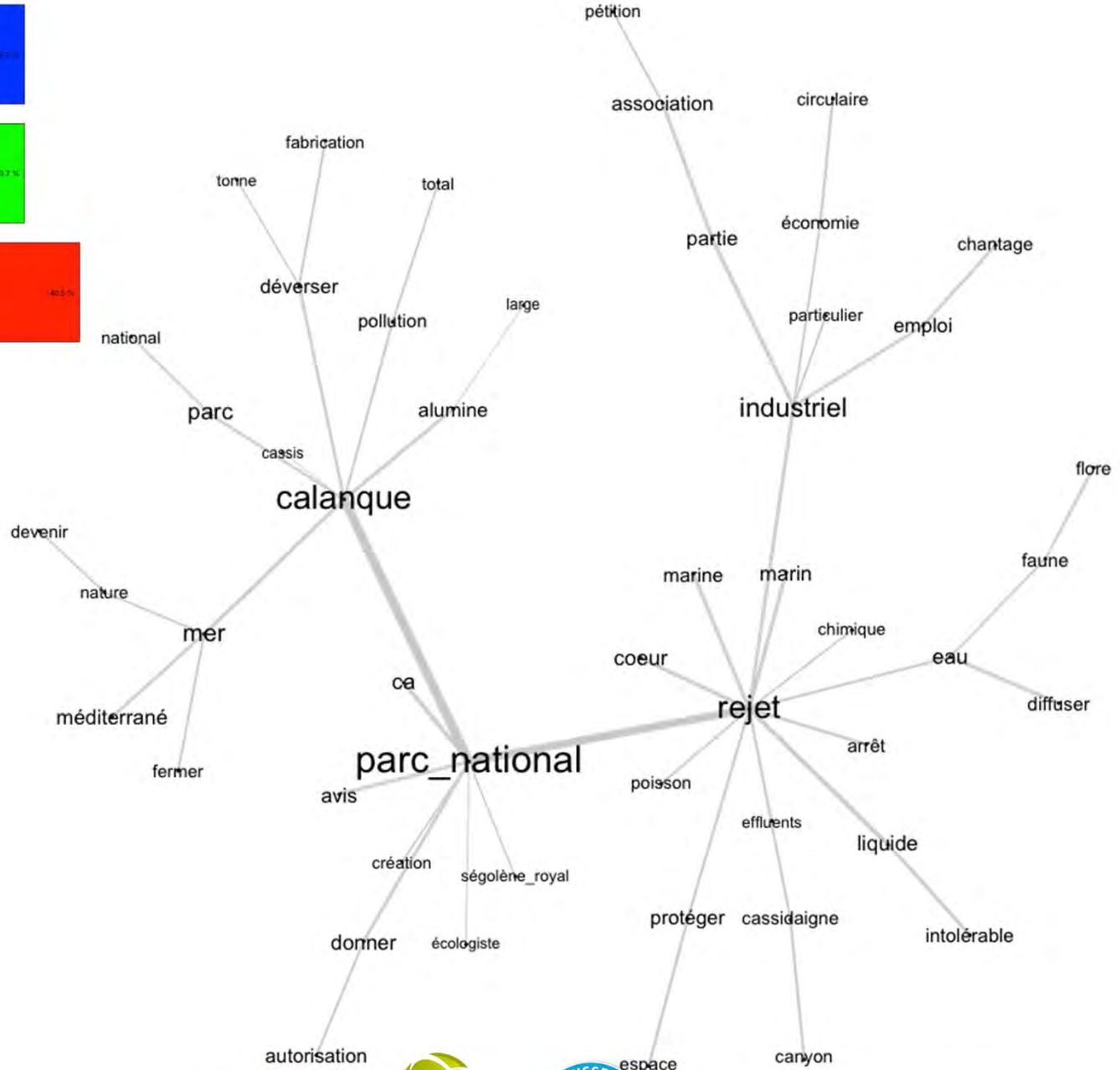
classe 1

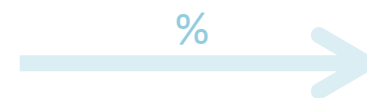
Classe2 Study





Classe3 –
Parc
National





| | primaire | secondaire | | | primaire | secondaire | |
|-------------|----------|------------|-----|---------|----------|------------|------|
| opposition | 18 | 164 | 182 | no | 10% | 90% | 100% |
| Approbation | 78 | 21 | 99 | yes | 79% | 21% | 100% |
| neutre | 17 | 36 | 53 | neutral | 32% | 68% | 100% |
| | 113 | 221 | 334 | | | | |
| | primaire | secondaire | | | primaire | secondaire | |
| opposition | 16% | 74% | | no | 5% | 49% | 54% |
| Approbation | 69% | 10% | | yes | 23% | 6% | 30% |
| neutre | 15% | 16% | | neutral | 5% | 11% | 16% |
| | 100% | 100% | | | 34% | 66% | 100% |

% total

| | internes | externes | | | internes | externes | |
|--------------------|----------|----------|-----|--------------------|----------|----------|------|
| opposition | 0 | 182 | 182 | opposition | 0% | 100% | 100% |
| approbation | 40 | 59 | 99 | approbation | 40% | 60% | 100% |
| neutralité | 0 | 53 | 53 | neutralité | 0% | 100% | 100% |
| | 40 | 294 | 334 | | | | |
| | internes | externes | | | internes | externes | |
| opposition | 0% | 62% | | opposition | 0% | 54% | 54% |
| approbation | 100% | 20% | | approbation | 12% | 18% | 30% |
| neutralité | 0% | 18% | | neutralité | 0% | 16% | 16% |
| | 100% | 100% | | | 12% | 88% | 100% |

opinion2



| Catégorie | % | n |
|--------------|--------------|------------|
| neutral | 15,9 | 53 |
| strongno | 41,1 | 137 |
| strongyes | 15,9 | 53 |
| weakno | 13,2 | 44 |
| weakyes | 13,8 | 46 |
| Total | 100,0 | 333 |

institut1

Adj. Valeur P=0,000, Chi-deux=198,001, df=8

associations; residentscal;
residentsmg; activists; professionals

scientists; firm; politicians;
authorities; park; unions

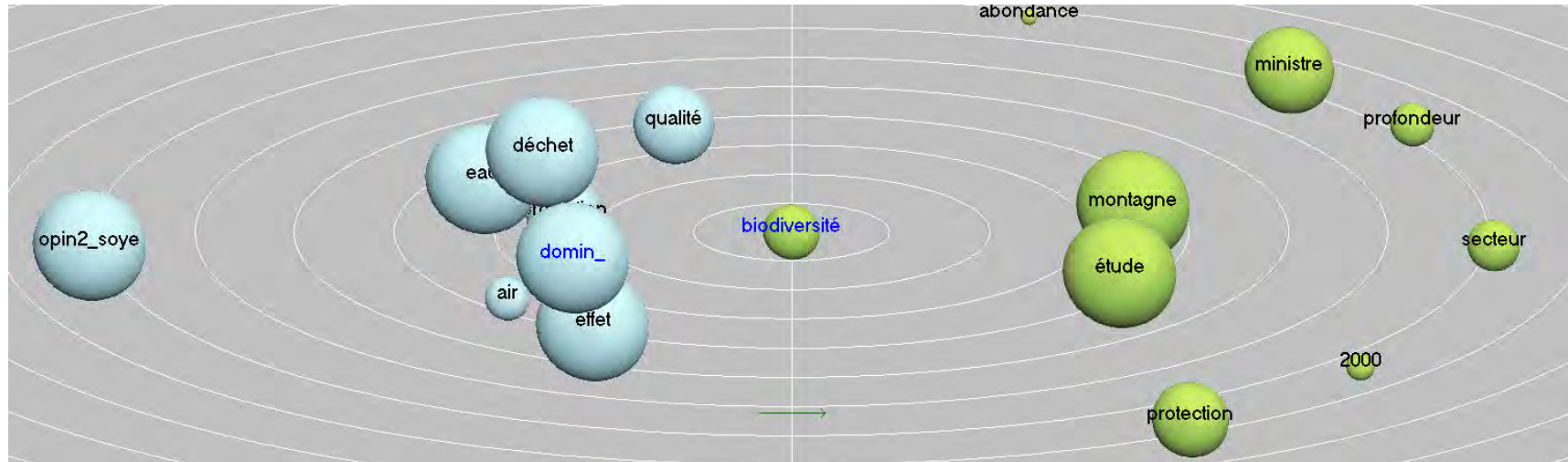
media; state; prefect; experts

| Catégorie | % | n |
|--------------|-------------|------------|
| neutral | 8,3 | 11 |
| strongno | 69,9 | 93 |
| strongyes | 0,0 | 0 |
| weakno | 15,0 | 20 |
| weakyes | 6,8 | 9 |
| Total | 39,9 | 133 |

| Catégorie | % | n |
|--------------|-------------|------------|
| neutral | 11,1 | 14 |
| strongno | 11,9 | 15 |
| strongyes | 41,3 | 52 |
| weakno | 7,9 | 10 |
| weakyes | 27,8 | 35 |
| Total | 37,8 | 126 |

| Catégorie | % | n |
|--------------|-------------|-----------|
| neutral | 37,8 | 28 |
| strongno | 39,2 | 29 |
| strongyes | 1,4 | 1 |
| weakno | 16,9 | 14 |
| weakyes | 2,7 | 2 |
| Total | 22,2 | 74 |

Status of biodiversity (Tropes analysis)



La préoccupation biodiversité n'apparaît que chez les « opposants » aux projets

Conclusions (provisoires)

- Faible référence à la biodiversité dans les textes enregistrés
- La biodiversité marine est beaucoup plus valorisée que la biodiversité terrestre
- Les acteurs les moins impliqués (intérêts en jeu de bien-être faible) sont massivement opposés au projet de rejet des eaux de lessivage
- Les acteurs les plus impliqués se partagent entre favorables et défavorables, en moins grand nombre cependant
- Chez les acteurs impliqués, la nature des intérêts économiques et de bien-être détermine les positions
- Chez les acteurs défavorables, les raisons de l'opposition relèvent de motivations plus complexes et enchevêtrées

| | Anthropocenic oriented | Ecosystem Services oriented |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interaction Man-Nature | Man affects nature at a scale that threatens its very existence. Pessimism and uncertainty about the future times without radical changes | Man and Nature have mutual benefits in interacting. Optimism and vision of opportunities about the future |
| Industrial activities (IAs) | IA affect nature in different ways: induce pollution, are responsible for climate change, participate to erosion of biodiversity. IA affect health, and well-being of human beings. | IA are essential for development of human society and prosperity of nation (democracy). |
| Management & policies | IA must be sharply constrained by authorities and regulation. Conviction that IA are expressions of a capitalistic model which produces injustice between people and nations. As such IA must be reduced and exchanged for lighter activities, integrated and oriented towards local environment (communities and nature). | IA must be managed (encouraged) to evolve continually in the way of reducing externalities and internalizing them into market systems. Strong confidence in science and innovation to mitigate the detrimental effects of the externalities. |
| Economic model (assessment) | New international economic order is expected by adoption of new environmental ethic, sustainable modes of development. | Liberalism/capitalism supporters Free-marketeters |
| International legislation | The IUCN Red List of Threatened Species (IUCN Red List), 1964 | The Convention on Biological Diversity (CBD), 2002 |
| Statut of Living Resource | The planet is a "common" and resources are public: they are a common Heritage of mankind. Without deep change in the way they are managed, the "tragedy of commons" will take place at the planet scale. | State sovereignty over the resources, local people or under private ownership. Property rights induce the owners to take care of their natural resources. The "tragedy of commons" is avoidable with proper pricing and mitigating local mechanisms |
| Parks | The national park of the Vanoise (in its original 1963 version) according to the founding law of July 22, 1960 | National Park of the Calanques (according to the new law of 14 April 2006) |
| Literature | Attenborough, D. (1987). The First Eden: the Mediterranean world and man. London: Collins. | Groove, A. T., & Rackham, O. The nature of Mediterranean Europe. An ecological history (Yale, New Haven, London 2001). |
| Governance | More centralized and authoritative governance for the preservation of nature | More decentralized and free market oriented governance for the preservations of nature |
| Decision under uncertainty | "Precaution principle" (Constitutional in the French case) | "Risk taking" has been the source of innovation and progress during the last centuries and should not be corseted excessively |
| Governance | More centralized and authoritative governance for the preservation of nature | More decentralized and free market oriented governance for the preservations of nature |

Man-nature orientation

From Boutin (2015)

*PhD dissertation in progress
Do not quote*

VOILA!

