The detailed steps to constructing a problem statement

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PART ONE: Analysis of the demand/commission

The production of scientific knowledge is not independent of social demand.
Insofar as a scientific work acts as a stamp of approval and is used to make decisions regarding the activities or direction of a program or project, it is critical to investigate what this work is going to guarantee.

In the end, when a society requests a survey to be carried out, what does it want? Tools to establish social peace, or arguments to justify claims or policy choices? The researcher or person in charge of a study shows his or her professionalism when s/he deciphers the **study's social mandate**; in other words, when s/he seeks to understand composition of the social demand underlying the explicit objectives laid out by the commissioner of the study. This can be begun by identifying the social actors and their functional and symbolic relationships with the study topic. The actors concerned by a study are the commissioner of the study, the beneficiaries, and funders, and, furthermore, the social groups that could be affected by the study's outputs and their consequences. The concrete realization of the study takes place through the commissioning of the study, the provision of diverse resources, the reception and validation of study outputs, and their diffusion. Symbolic relationships are expressed in the discourse and texts produced, on one hand in relation to the study topic itself, and, on the other, to the actual conduct of the study. This deciphering of the social mandate is a preliminary step carried out before the study/survey is implemented; it also is an-going process of questioning the study's own practices, scope, and social utility that continues after the implementation of the study/survey.

The study/survey commission and the research topic most often are stated succinctly by the commissioner (very often also the funder) in a few lines or questions. The study commission statement can also be written in the form of a Terms of Reference document several pages long. This document may include a description of the context, recommendations on approaches, or even lay down requirements regarding the methods and tools to be used.
In both cases, many of the terms used are imprecise, relying on notions and not concepts. Furthermore, the questions asked by the commissioner often hide implicit **paradigms** and **models** that orient the formulation of the questions themselves.

The scientific approach consists of not accepting at face value the *a priori assumptions* of the commissioner of a research or study project. The first job of a researcher consists of analysing the **study or research commission**. This involves examining the study topic itself from several angles:

- What are the **explicit and implicit objectives** of the study or research?
- Who are the **beneficiaries**?
- What are the **challenges** and what are **the stakes** for each stakeholder in the study being commissioned (including the commissioner/financial sponsor)?
- Are each of the terms in the commission statement clearly defined? If not, what **concepts** could replace **plurivocal notions**?
- Does the commission statement include all of the important dimensions of the study or research topic? If not, is this justified (are other teams working on other dimensions…)?
- To which theoretical frame(s) do the terms contained in the commission statement explicitly or implicitly refer?

The analysis of the commission takes place through discussions with the commissioner. The commissioner -- *persona intuite* and as an institution – is an integral part of the study. The commissioner's own implicit and explicit objectives and stakes in the study must be made explicit. One may be led to distinguish the person in charge of the study commission from the institution to which s/he belongs.

Example 1: Mali case study (Mary *et al.*, 1999; Peltier *et al.*, 1999)

The initial commission made by Peltier and Sylla: Extract from Mary *et al*. (1999)

"Work with village inhabitants, over fifteen days, in Banko and Kasaro villages, to include:

- *Surveys at different levels to determine the largest group possible likely to sustainably manage a forest. For this, you will start at the current sales point (the train station) and you will study the marketing chain supplying this sales point (merchants, intermediaries, transporters, loggers). You will state if it is possible to reasonably hope that a Rural Management Structure (SRG) set up at this level can control the activities of loggers in the forest (direct them to certain plots, impose a choice of species, diameters, heights, and type of felling, etc…);*
- *You will determine the role of forest-related development projects operating in the area. You will describe their approaches.*
- *You also will investigate if this structure could continue to function and apply a development plan when the new road has modified the placement of sales points;*
- *If the answer to both of these two questions is "yes" (in the present and future situations), you will determine the area of the forest that could be developed for the SRG;*
- *If the answer is "no" to at least one of the questions, you will redo the study at the village level and, if necessary at the hamlet level;*
- *Having found the largest size possible for an SRG that is viable over the short and medium term, you will delimit the corresponding forest;*
- *You then well carry out the surveys and inventories normally made by farmer organizations to put together a request for a rural market status, also making:*
    - *an inventory of the species in the forest,*
    - *an inventory of woody agro-forestry systems,*
    - *a development plan that is as precise as possible while remaining realistic."*

Several remarks may be made following the analysis of this detailed commission:

- the work plan is unrealistic for a fifteen-day field study.
- the term "village inhabitants" was replaced with "population" to include people who were concerned by the subject but who did not necessarily live in the villages.
- the notion "approach" used by the commissioner is polysemic. The students responsible for the study broke this word down into four expressions that were less polysemic, and thus more conceptual. They wished to focus on (i) the work **methods** of each project to connect with the population, (ii) the **geographic space** in which the project worked, (iii) the **vocabulary** used by each project and (iv) the field **activities** of each project.
- the commissioners were asked two questions:
    - How were the two villages (Banko and Kassaro) selected?
    - In what way were they considered to be representative?

Example 2 : «Knowledge and perception of the role of trees in ecological issues » (Sibelet and Mutel, 2007)

Here is a report on the problem statement construction stage made by students who were to conduct a sociological survey in Montpellier, France

"Under our training programme, we had to conduct a survey whose theme had been formulated by researchers at Centre de coopération internationale en recherche agronomique pour le développement (CIRAD) (French Agricultural Research Centre for International Development) in collaboration with our teachers. The objective of the study was to assess "knowledge of students in masters and post-masters programmes of the place of trees in ecological equilibriums". The survey was part of a preliminary study for the organization of open forums and discussion tables.

*After discussions with the researchers, we identified **two main issues at stake**: the first, which was pedagogic, concerned our trainers and lay in an initiation to survey methods. The second issue regarded the scientific community in Montpellier, which wished to obtain information that could be used to develop outreach activities for students in Montpellier regarding the topics studied.*

*To carry out this commission, we first had to **identify the polysemous terms and semantic fields** of words in the commission: "Knowledge of students in masters and post-masters programmes of the role of trees in ecological equilibriums". We identified four main polysemous notions: knowledge, place, trees, and equilibriums.*

***These notions were explored and made precise** through a literature review to choose concepts that could be used and accepted by everyone participating in the survey.*

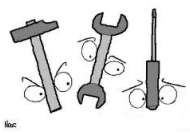
We shall refer to two examples to illustrate our literature review: those of the notions of knowledge and trees. We chose these two examples because the process produced different results.

With regard to the first term, "knowledge", it struck us as essential to explore this notion in detail because, as forestry specialists, our knowledge of sociological themes was relatively limited. Understanding this term thus was essential if we were to understand the commission. To do so, we studied a simplified Gurvitch grid (Gurvitch, 1971) which organized the notion of knowledge into types (technical-scientific, political, socio-economic, common meaning) and forms (empirical/conceptual, mystical/rational, intuitive/reflexive, symbolic/adequate). We learned that knowledge can be split into two main sets: (i) understanding that is explicit, (can be put into words and transmitted as information) and (ii) perception of a notion that is more intuitive and which comes more easily from common meaning. We chose to reformulate the topic of the commission by using these two terms: "understanding" and "perception".

For the term, "tree", we followed the same literature review approach but did not get involved in a scientific manner with researching the biological functions of trees. We simply researched the semantic scope by listing the categories of analysis that could most relate to the use of a tree (fruit tree/lumber tree/landscape tree...), the location of a tree (in a forest, garden, beside a field...) and a tree's functions (habitat for animal species, property marker, economic production, production of a service – shade, fencing...). However, following this literature review, it seemed to us interesting to keep the word 'tree' in our study topic, which allowed us to keep the entire range of significance that the term covers, and all categories of trees possible (fruit trees, plantation tree, young tree...).

Same kind of work was done on the terms "place" and ecological "equilibriums" that were finally replaced by "role" and ecological "stakes".

At the end of this conceptualization and literature review process, we reformulated the topic of the commission, fully understanding the precise meaning of the terms used:
What is the understanding and perceptions of students in masters and post-masters programmes of the role of trees in ecological stakes?"



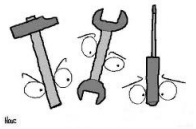
A discussion space on the topic, "What should be the level of consciousness of a researcher or person in charge of a study?" (discussion in class or on a forum depending on the choice of the instructors).

Exercise "Analyse the commission and construct the problem set" (based on the Larzac study, France).

The analysis of the commission often leads to reformulating the topic to:

- make it more precise by replacing notions with concepts that are clearly part of a theory,
- adapt it to the objectives of the survey,
- limit it to only some of its dimensions,
- or, to the contrary, broaden it to include important dimensions that were forgotten or ignored by the commissioner.

The analysis of the commission is an epistemological prerequisite of the survey and is part of the construction of the problem statement.



A discussion space

"Conceptualize the commission based on a research question or a study topic voluntarily formulated in a non-conceptual manner (with polysemous words, notions from everyday language)" (discussed in the class or on a forum depending on the choice of the instructors).

The next step in the process is described in the following lesson.

▶ Bibliography cited:

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Mary, F., N. Sibelet, and G. Smektala. 1999. *Guide méthodologique pour la conduite d'une étude en milieu rural. Cours de l'ENGREF*. Montpellier, France: CIRAD-TERA - 32 p.

Peltier, R., K. Kokou, F. Mary, N. Sibelet, and G. Smektala. 1999. *Gestion locale et decentralisée des ressources forestières pour l'approvisionnement en bois: Le cas de deux villages du bassin d'approvisionnement de Bamako, Banko et Kassaro. Etude effectuée de 8 février au 8 mars 1999 au Mali, promotion FRT 1999*. Montpellier: ENGREF [Montepllier], 137 p.

Sibelet, N. and M. Mutel. 2007. *Savoirs et représentations sur le rôle de l'arbre dans les enjeux écologiques : Enquête auprès d'étudiants de Montpellier ayant plus de deux années d'études après le baccalauréat. Etude réalisée du 04 au 13 octobre 2006*. Montepellier: CIRAD, 73 p.