

Information Matters, Dominican Republic:

Information Matters: Capacity Building for Ambitious Reporting and Facilitation of International Mutual Learning through Peer-to-Peer Exchange



3rd Training Mission: Dominican Republic

Santo Domingo, 25-27th November 2014

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

On behalf of



of the Federal Republic of Germany

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Photo credits

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Mission activities

The 3rd Capacity Building Information Matters Mission to the Dominican Republic took place from 25-27 November 2014 in Santo Domingo. An agenda of the mission's activities is presented in Appendix 1. A detailed report of the entire mission will be produced by the GIZ (in Spanish and English).

The main activity held during the mission was a workshop aimed to build on the activities conducted at the previous capacity-building workshop held September 8-12, 2014. This consisted of an in-depth 3 day training with a core inventory team, aiming to 'demystify' the process and covered core topics such as data collection and data management, dealing with data challenges, key category analysis and uncertainty, QAQC and reporting. This was followed by 2 days of sector-specific training with wider stakeholder groups representing Energy, Transport, Industry and Waste sectors, introducing sector-specific methods and identifying data sources and gaps. One of the major outputs of the previous workshop was the identification of key emission sources, and their data availability and gaps, as well as the key stakeholders for each sector. The intention was that these stakeholders were engaged during the intervening period, and the identified data obtained. Also during this period, the sectoral coordinators for the Dominican Republic's 3rd National Communication (3NC) were identified. The Information Matters Mission therefore aimed to complement and support their inventory compilation activities.

The third Mission aimed to build on the identification and engagement of key stakeholders and associated data, work with participants and their data to generate initial calculations, and go into more detail on key topics that were highlighted. One topic of particular interest to participants in the second workshop in September was the application of QA/QC procedures and processes in the Dominican Republic.

The three day workshop held in November 2014 was therefore structured as follows: Day 1 considered QA/QC requirements and procedures, with examples; Day 2 was an in-depth and hands-on 'data clinic' (Energy and transport sectors represented in the morning, and Industry and Waste in the afternoon), reviewing progress on data collection and processing so far and identifying methods to improve and fill gaps; Day 3 was a practical introduction to the IPCC 2006 Inventory Software with data processing and input by participants.

For this workshop, Ralph Harthan of the Öko-Institut was brought in as an external expert, focussing on the third day (IPCC inventory software).

Table 1 gives an overview on mission's activities during the 3rd capacity-building mission. In this table:

- **Blue** sessions represent 'lectures'
- **Green** sessions represent breakout group work
- **Orange** sessions represent presentations from the Dominican Republic
- **Red** sessions represent case study presentations
- **Purple** sessions represent plenaries

Table 1: Overview of mission activities as delivered

	Tuesday 25 th November	Wednesday 26 th November	Thursday 27 th November
a.m.	Introduction Update and overview by 3NC	Status of the sectoral GHGI (Energy including Transport)	Introduction to the IPCC 2006 Inventory Software
	Key elements of QA/QC I	Introduction to sector IPCC guidelines and methods	Working with the IPCC software: data processing and input
	Lessons learned on the GHGI in the DR AFOLU sector	Sectoral support session: Energy and Transport	
	Case study of QA/QC in Tunisia		
p.m.	Setting up a QA/QC system for the DR GHGI	Status of the sectoral GHGI (Industry and Waste)	Working with the IPCC software: data processing and input
	Key elements of QA/QC II	Introduction to sector IPCC guidelines and methods	
	QA/QC examples	Sectoral support session: Industry and Waste	Feedback on results

Summary of activities

Tuesday 25th November

The day began with a welcome and introduction to the workshop, introduction of participants, and an overview of the Information Matters project. Ricardo-AEA introduced the format of the three days and the topics to be covered, and stressed that the workshop aimed to build upon the previous Information Matters workshops and support the development of the GHG Inventory currently underway. The workshop was well attended by participants from a range of backgrounds and organisations (see attendance list in Appendix 2), and many participants were new to the project. The 3NC project team gave an update on progress to date, particularly the appointment of GHG inventory coordinators.

The day focussed on QA/QC as this was identified as a topic of further interest in the previous workshop, and of relevance to the sector coordinators beginning inventory compilation. The first presentation reminded participants key issues on QA/QC, in particular:

- Overview of QAQC process
- Timelines
- Roles and responsibilities
- Documentation and archiving (general)
- Data management

The presentation also introduced the ‘QA/QC Plan’ and reminded participants of the use of Excel ‘mastersheets’ with codes for checking and categorising information, using the UK example. This was followed by an example from the Tunisian Inventory. It was clear that some participants were confused about the role of QA/QC and how a QA/QC system differed from a GHG inventory system. This is possibly in part due to the number of new attendees who had not participated in previous workshops, and to the early stage of inventory preparation by all participants. It was difficult for them to see the relevance of QA/QC at an early stage in the process, despite making the point that it is better to start with an agreed approach across all sectors, for instance, in documenting data. It is possible that had QA/QC been

discussed at the end of the three days, after the hands-on data sessions, its relevance could have been clearer to the participants.

What followed was a case study presentation on the agriculture sector. This presentation showed how emission calculation and compilation for livestock and for crops was previously carried out by the Ministry of Agriculture. Points raised included the use of data from multiple sources, including project-level as well as national survey and international datasets; the role of expert consultation and the need to convince stakeholders to cooperate; the need for further research (for example on livestock numbers); the need for a coordinator to assign responsibilities; the need to standardise information; and the use of checking procedures, for example of yearly crop growth. Dropbox is used to archive the AFOLU data, and calculations are done using the Agriculture and Land Use Greenhouse Gas Inventory (ALU) Software, developed by Colorado State University.

This was followed by a case study on QA/QC in the Tunisian GHG inventory, demonstrating to participants how a non-Annex 1 country has approached QA/QC.

The first breakout session on the setting up of a QA/QC system for the Dominican Republic was undertaken in the afternoon. Participants worked in groups to identify organisations that might fulfil the QA/QC roles and responsibilities identified in the IPCC Guidelines, and the interaction of these organisations to ensure a robust inventory. All groups presented back their ideas on a structure for QA/QC in the country and the group outputs are shown in Appendix 3. This was summarised in a plenary in the diagram in Figure 1.

Breakout Summary

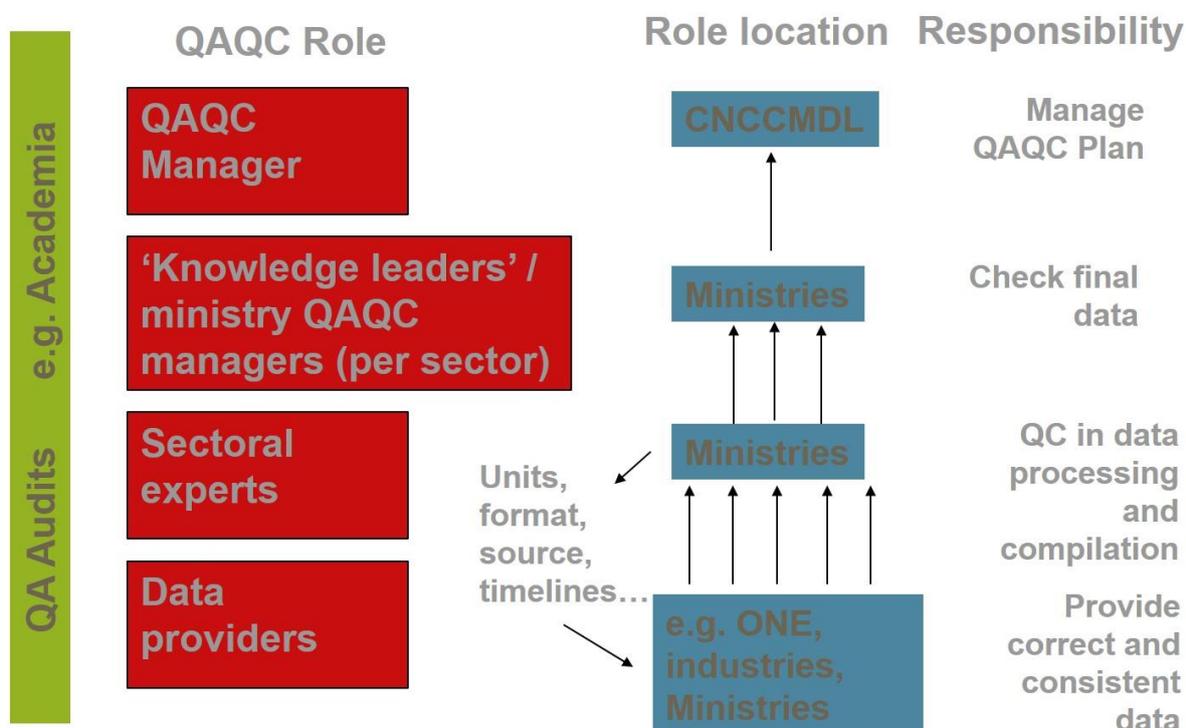


Figure 1: Summary diagram from group proposals on a QA/QC Plan for the Dominican Republic

The remainder of the afternoon consisted of a second presentation on QA/QC, focusing on examples of specific checks and procedures. No time was left for the remaining breakout sessions due to overrunning activities and a late start, so instead a plenary discussion was held where participants shared experience of

working with poor quality data, and the actions they took to resolve this. Ricardo-AEA shared examples of poor quality datasets and there was a group discussion on how to identify the faults, and what options were available to improve the data and potential uses.



Figure 2: Group feedback on QA/QC Plan for the Dominican Republic



Figure 3: Group feedback on QA/QC Plan for the Dominican Republic

Wednesday 26th November

The aim of the second day was to work with participants on sectoral data in a ‘clinic’ format, to identify gaps and weaknesses, check the suitability, and prepare the data for input into the inventory software. The morning session was attended by Energy (including Transport) sector representatives and stakeholders, and the afternoon by participants related to the Industry and Waste inventory sectors. The sessions began with an introductory presentation on each sector by Ricardo-AEA, presenting the IPCC Guidelines, key sources and methods/approaches for the sources. Then the 3NC sectoral GHG inventory coordinators provided an update on progress to date so far, specifically the stakeholder meetings held and progress made at each, such as identifying methods, organisations and data.

The rest of the session was intended to run as a ‘data clinic’ and participants had been asked both several times in before the workshop as well as at the end of the first day to bring with them any relevant datasets for their sector. However, most of the participants did not bring data to the second day of the workshop and so the groups were asked to consider the questions below. These aimed to further help them identify data that was readily available (such as national statistics and online information and reports) and could be obtained (e.g. through asking colleagues, downloading from national sources) for the third day’s practical session with the IPCC inventory software:

- Review the available data for your sector
- Does it need to be improved?
- How it could be used in the GHG Inventory?
- What additional data, research, or improvement is needed?
→ Write down any key findings on paper to share with the group

The groups all identified the major sources and many potential publicly available or easily accessible sources of data, and set themselves the task of obtaining as much as possible to bring the following day. This involved, for example, communicating to Ministry colleagues their needs, downloading online datasets, extracting relevant information from reports, and identifying suitable proxy data (such as international defaults) via the internet. Specifically, activities during the second day identified the following:

- The Energy group were well aware of the presence of the national energy balance, which was available to them for the activities, and so they spent time reviewing this for inconsistencies and errors.
- The Transport group identified the types of data required to undertake bottom-up calculations for road transport, and discussed approaches for dealing with international emissions. Several reports and some national statistics were identified which contained some vehicle and travel data that could be used. The IDAC (Dominican Civil Aviation Authority) had excellent detailed data on flights and so a very detailed estimation could be made for this sector.
- The Waste group had obtained various sources of data but these were inconsistent and mainly presented local data for limited time periods. This group was advised to try to synthesise the data and generate an approximate time series for the country through scaling available data and exploring the use of proxy indicators such as data from other similar countries.
- The Industry group had cement production data available via another GIZ project, which they were able to work with. They also identified other major industrial sources and looked for available data. Much of this was not available.

Thursday 27th November

The third day of the training focused on the IPCC 2006 Inventory Software.

The day comprised a short introduction to the scope and the use of the IPCC inventory software including an example calculation of GHG emissions in the electricity sector. Five groups were formed in which hands-on calculations of GHG emissions were carried out: energy, transport, industrial processes, waste as well as agriculture and land use (AFOLU).

The focus of calculations was on the inventory years 2010 and 2011 and data provided by the participants were predominantly used, but some proxy or surrogate data were provided by Ricardo-AEA where no data was available, in particular for the Industry sector. Results of calculations were presented in the plenary after the group exercises. The conclusions at the end of the third day are presented below.

Conclusions on sector inventory progress

This section sets out the overall findings from the workshop on the progress and status of the different GHG inventory sectors in the Dominican Republic. The information was kindly compiled by Ralph Harthan.

Energy

The Energy group used the Dominican Republic energy balance for calculating the reference and sectoral approaches.

Generally, most of the data required for the calculation of the apparent consumption in the reference approach were available in the Dominican Republic energy balance. In its calculations, the group noted

that the row “export” in the energy balance was empty for all fuel types. This casts doubt on whether the overall balance between production, import and export is correct due to the fact that export does occur, for instance regarding the export of transportation fuels to Haiti. The group discussed that this issue could be further followed up with the national tax authority which probably disposes of data regarding import and export (for taxation purposes).

Furthermore, the calculation of the reference approach requires the consideration of international bunkers. A corresponding assumption was made by the group. In the future, coordination with the responsible persons in the inventory team dealing with domestic and international aviation and navigation is required.

The group also calculated the bottom-up sectoral approach. The differences between the sectoral and reference approaches were significant for some fuels. However, this was probably owing to the fact that the exercise for the sectoral approach could not be fully completed in the workshop. It is recommended that the two approaches be compared when “real” inventory calculations are carried out.

Overall, the work in the group demonstrated that a tier 1 calculation of the sectoral and reference approaches in the energy sector is feasible with the data already available and within a reasonable time frame.

Transport

The transport group focused its exercises on the disaggregation of fuel consumption between different vehicles types (e.g. cars, light duty trucks, heavy duty trucks, buses, etc.) as well as on the disaggregation between national and international fuel consumption in the aviation sector.

The exercises showed that data are available for different vehicle types (e.g. number of cars or cargo vehicles). However, further work is required with regard to the actual breakdown of fuel consumption according to vehicle types. Also, there was no data available to separate light duty trucks from heavy duty trucks. It is noted that for a first estimate of GHG emissions in the transport sector, a breakdown into vehicle types is not necessarily required as the road transport fuel consumption is known from the national energy balance. However, if national policies (e.g. NAMAs) become relevant to the transport sector (or subsectors), a further disaggregation of data, especially given the uncertainties in the energy balance, is desirable

The group also discussed the bottom-up estimation of emissions for aviation. Information on numbers of flights to different destinations was already available and used in the exercises, and the group worked towards classifying flights by location. The majority of flights were international. The dataset available is very complex and the group were initially recommended to aggregate data to simplify calculations, for example by categorizing all flights to European destinations as ‘Europe’ and applying a generic distance factor in order to use IPCC flight emission default data. It is recommended that efforts should focus on identifying domestic flights as most important to the national GHG inventory, although it is recognized that in the Dominican Republic domestic aviation is very small compared to international, due to its tourism destination status..

Industrial processes

The group carrying out GHG inventory calculations in the industrial processes sector focused on the cement sector as well as on the metal industry. Data of clinker production required for the calculation of GHG emissions in the cement industry are already available via another GIZ project, and corresponding calculations could be carried out. However, confidentiality issues are relevant. It is recommended to continue the work and to clarify confidentiality requirements.

In the metal industry, GHG emissions from ferronickel alloys were discussed. However, it was noted that no corresponding emission factors are available in the IPCC 2006 Guidelines. Therefore, the group was encouraged to start research on this industry and identified a corresponding emission factor from a Dutch university to use. In the absence of further activity data for the Dominican Republic metal industry, EUROSTAT data was provided by Ricardo-AEA to use as a proxy for the purposes of software use in the workshop. This will need to be updated with real activity data when available.

Overall, discussion was ongoing on what industrial sectors are actually relevant in the Dominican Republic. It is recommended that the group continue investigations and discussions on potential relevant industrial sectors and the potential data sources. It was noted that a previous workshop already included a discussion on relevant industry sectors in the Dominican Republic and the outputs of this should be built upon in now seeking to engage the identified organisations to obtain the data.

Waste

The sector carrying out calculations in the waste sector focused on CH₄ emissions from landfills. Data regarding waste production (overall quantity), waste composition and disposal routes (types of landfills) are scarce in the Dominican Republic. However, the waste group considered several studies regarding waste production and waste composition in individual years and were recommended to synthesize, aggregate and scale this data to assess its utility and generate proxy activity data for the country. The group succeeded in calculating CH₄ emissions from landfills and is very much commended for these achievements.

However, it was noted that numerous assumptions were required for the calculation of CH₄ emissions over the whole time series. It is therefore recommended that the waste sector further investigates and justifies the assumptions used in the waste inventory. There is also a need to further investigate ways to put in place the collection of data on waste production, waste composition and disposal routes in the future in order to improve the quality of the inventory over time.

It is also recommended to continue the work on GHG emissions from wastewater.

AFOLU

The group carrying out GHG calculations in the AFOLU sector first carried out several calculations regarding GHG emissions from enteric fermentation and manure management (e.g. for swine). The calculations showed that some activity data (e.g. number of animals) are available in the Dominican Republic. However, further work is required with regard to the coverage of this data (since animals may also be kept in households and small farms may not be covered by the statistics). Also further work is required with regard to manure management types in the Dominican Republic.

Furthermore, some calculations were carried out regarding land-use changes. Due to the complexity of this sector, it is recommended to further continue the work in this sector.

Overall conclusions

There remain some issues for data availability across the sectors in the Dominican Republic, and much of the effort for compiling the inventory will be focused on obtaining, checking, verifying, processing and manipulating data in order to estimate emissions from the different sectors. Waste faces some of the greatest difficulties in obtaining accurate activity data. Transport has a mixture of very detailed datasets, and some much less accurate and general sources of information. The energy balance is comprehensive but appears to have errors and reliability is therefore questionable. The industry sector is lacking data on most activities but plants should be able to provide information routinely if a reporting process is established. AFOLU have undertaken some inventory work previously and the sector is in a better position in terms of understanding available data. Generally, all the participants easily grasped the requirements and demands that an inventory places upon sector-level data and are motivated to obtain and improve it.

Overall, the IPCC inventory software was considered as a useful tool for calculating the GHG inventory. However, participants noted that the software contained some errors and had limitations, particularly in terms of the coverage of industries, breakdown of sources, and ability to carry out data processing. Also, it was noted that documentation and QA/QC was difficult in general using the IPCC software. Backstopping support with inventory experts (e.g. Skype conference or similar) via the Information Matters project would both benefit the inventory compilers and provide useful QA.

The inventory software allows the import and export of excel sheets. As much of the data processing occurs in Excel and outside of the inventory software, and as the IPCC software recommends that data is shared and managed via Excel and not multiple versions of the software, it is recommended to use Excel tools and the IPCC software in parallel. This way cross-checking (between both tools), documentation (in Excel) and QA/QC (in Excel) could be ensured while at the same time enjoying the practicability of the IPCC inventory software for undertaking the calculations, provision of emission factors and default information, and central storage of data.

The inventory team also needs to ensure it considers the QA/QC requirements of an inventory from an early stage in the process, to ensure consistent reporting and documentation across sectors of calculations, raw data etc. It is recommended that an individual is nominated to take responsibility for internal QC.

Overall, the inventory exercises demonstrated that the inventory team of the Dominican Republic is very well motivated and has access to data which can be used as a good starting point for the preparation of a GHG inventory within a reasonable timeframe. It is recommended that continuity in the GHG inventory team is ensured in order maintain and further develop the capacity of the team.

Once a draft version of the inventory (complete inventory or sectoral inventories) is available (including documentation), it is recommended that an external review could be conducted as a means of quality assurance and in order to further improve the quality of the Dominican Republic inventory.

Appendices

Appendix 1: Agendas of the mission workshops

Appendix 2: Participants lists of the mission workshops

Appendix 3: Photos of workshop outputs

Appendix 1: Agendas of the mission workshops

Please note: due to availability of case study presenters, the order of sessions on day 1 was altered from the original agenda below. See [Table 1](#) ~~Table 4~~.

3rd Capacity Building Mission 25-27 November 2014, Santo Domingo

Day 1: QA/QC training for the GHG inventory coordination team

Time	Content	Details	Responsible
09:00	Introduction		GIZ
09:30	Status of the DR GHGI		3NC Team
10:15	Key elements of QA/QC I	Reminding participants of key issues on QA/QC as addressed in previous workshop - general level. <ul style="list-style-type: none"> • Overview of QAQC process • Timelines • Roles and responsibilities • Documentation and archiving (general) • Data management 	R-AEA
11:00	Coffee break		
11:15	Break-out Session: Setting up a QA/QC system for the DR GHGI	Participants discuss responsibilities, processes for a QA/QC system in the DR (coordinative level, not sector level) <ul style="list-style-type: none"> • Brainstorm on paper • What roles/responsibilities can participants take? What already exists? What will continue past the 3NC? 	R-AEA
12:30	Presentation and discussion of results		
13:00	Lunch		
14:00	Lessons learned on the GHGI in the AFOLU sector		
15:00	Key elements of QA/QC II	Reminding participants of key issues related to <ul style="list-style-type: none"> • QAQC Plan • Specific QAQC checks 	R-AEA
15:30	Coffee break		

15:45	Breakout Session	QAQC checks and procedures exercise: match the procedures with the checks	R-AEA
16:00	Break-out Session: QAQC examples	Review 'bad' data QAQC and identify problems and solutions	R-AEA
16:45	Feedback and discussion		
17:00	Closure		GIZ

Day 2: Practical work with the GHG sectoral teams

Time	Content	Details	Responsible
09:00	Introduction		GIZ
09:10	Status of the sectoral GHGI	Sectoral coordinators report on work done so far and problems encountered	Sector coordinators
09:30	Sectoral support session I: Energy and Transport	Working with the sectoral experts to close data gaps and ensure data quality. Two parallel groups.	R-AEA
11:00	Coffee Break		
11:15	Sectoral support session II: Energy and Transport	Working with the sectoral experts to close data gaps and ensure data quality. Two parallel groups.	R-AEA
13:00	Lunch		
14:00	Status of the sectoral GHGI	Sectoral coordinators report on work done so far and problems encountered	Sector coordinators
14:30	Sectoral support session I: Industry and Waste	Working with the sectoral experts to close data gaps and ensure data quality. Two parallel groups.	R-AEA
16:00	Coffee Break		
	Sectoral support session II: Industry and Waste	Working with the sectoral experts to close data gaps and ensure data quality. Two parallel groups.	R-AEA
17:30	Closure		GIZ

Day 3: Training on the IPCC Inventory software with inventory coordinators and sectoral teams of the GHG inventory

Time	Content	Details	Responsible
09:00	Introduction		GIZ
09:10	Introduction to the IPCC Inventory Software		Öko-Institut
10:10	Coffee break		
10:30	Working with the IPCC Software	Sectoral teams work with the Software entering data as far as possible. Öko, R-AEA, GIZ assist in software use.	Öko-Institut, Ricardo-AEA, GIZ
13:00	Lunch		
14:00	Working with the IPCC Software	Sectoral teams work with the Software entering data as far as possible. Öko, R-AEA, GIZ assist in software use.	Öko-Institut, Ricardo-AEA, GIZ
15:45	Coffee break		
16:00	Recap on the day	Sectoral teams present key lessons learned from working with the software. What went well, what did not? Where is more support with the Software needed?	Öko-Institut
17:00	Closure		GIZ

Appendix 2: Participants list of the mission workshops

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Appendix 3: Photos of workshop outputs

QA/QC Plan Breakout session

Rol: Revisión final antes de su ~~sumisión~~ envío a entrega oficial ante la CMNUCC, tomando en cuenta los principios del IPCC (TACCC), sugerencia de mejoras. Herramientas: Manual de Buenas Prácticas para las CU.

• **Expertos Externos revisores:** Auditores externos, al proceso
Rol: Auditoría del aseguramiento de la calidad. Evalúa el proceso llevado a cabo ~~pa~~ desde el inicio, y reportan al Gerente del inventario.

• **Líderes de conocimiento:** Academia

Rol: Brindar una opinión ^{técnica} científica por sector.

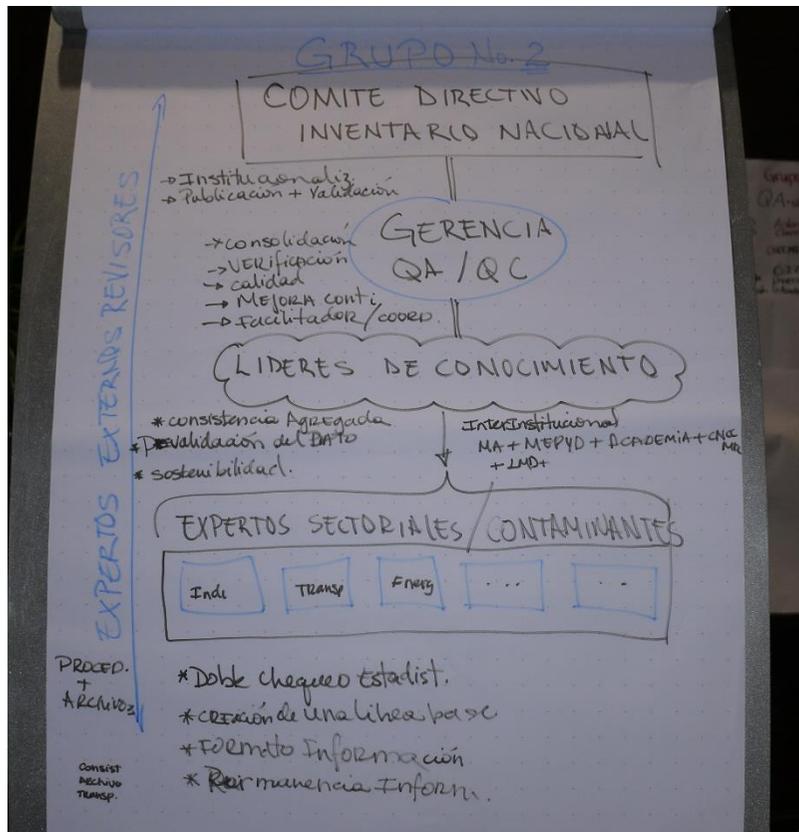
Hace un análisis profundo de la información reportada por sector.
Reportan al Gerente y a los Expertos Sectoriales. Informes técnicos como herramienta.

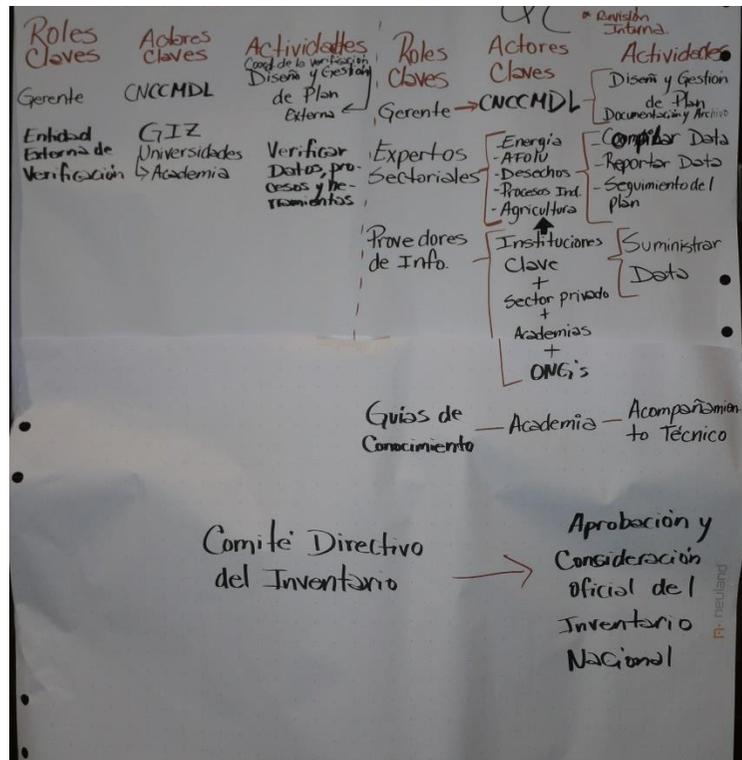
• **Expertos Sectoriales:** Especialistas en inventarios sectoriales y/o instituciones competentes

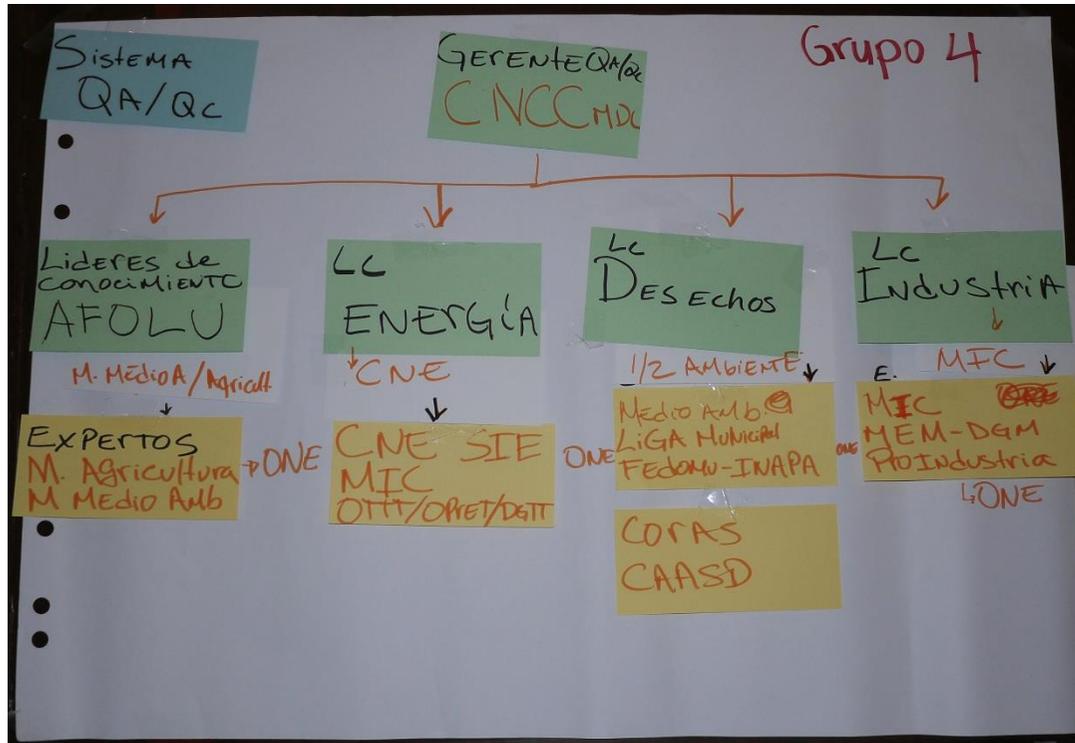
Rol: Definición de los datos requeridos, formatos, revisión de los datos entregados, identificación de fuentes, cálculos...

• **Gerente:** coordinador del inventario

Rol: Hace el plan, traza plazos, revisa el trabajo de los expertos sectoriales, da sugerencias.









Deutsche Gesellschaft für
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