Annex 1:
Comments on the prototype database from reviewers during the pilot testing and discussion on further improvements

This annex presents 119 comments on the prototype database obtained through the pilot testing (11 February – 8 April 2002) that were considered at the Second Expert Meeting in Bratislava, Slovakia on 23-24 April 2002. (Background Paper No.1 and its Addendum for the meeting)

Table of Contents

(A) Comments on the search/input process

(A-1) Comments on the IPCC category selection (STEP1)

<Amend the IPCC category>

Some reviewers suggested making amendments to the IPCC category so that it better reflects some specific conditions of sources. It may be reasonable, but not acceptable at the moment because such amendments inevitably entail revision of the IPCC Guidelines. One possible solution is to arrange the influencing factors in such a way that they better reflect the specific conditions of the sources instead of amending the existing IPCC categories.

No.	Comments	Possible solutions
1	In IPCC Category, irrigated rice cultivation is divided into continuously flooded and intermittently flooded. According to Chinese case, I do not know if there is the same case in other countries, the category is not detailed enough. Continuously flooded is commonly accepted as continuously flooded only during rice growing period, rather than flooded year-round. In continuously flooded rice fields, methane emission occurs only during the rice growing period and stop during the non-rice growing period because of drainage. In contrast, in permanently (year-round) flooded rice fields, methane emission not only occurs during the rice growing period, but also occurs during the non-rice growing period. In China, about 10% of rice fields is flooded permanently. We estimate that the total methane emission from permanently flooded rice fields during the non-rice growing period is about 1 Tg CH4. The methane emissions from permanently flooded rice fields during the rice growing period are usually also much higher than those from continuously flooded rice fields. Irrigation is necessary for this kind of rice fields during the rice growing period. <u>Because of unique feature of methane emission and large area of permanently flooded rice fields, I'd like to suggest to classify irrigated rice cultivation into year-round flooded, continuously flooded, and intermittently flooded.</u>	Not acceptable. One possible solution is to arrange influencing factors in such a way that this information can be included in database.
2	Can we further break down or expand for Agricultural Soils (N2O emissions) the following: - Direct Soil Emission (4D1) into Soil Emissions and Emissions from Histosols - Animal Production (4D2) into Emissions from Grazing and Emissions from AWMS - Indirect Emissions into Emissions from Atmospheric Deposition of NH3 and NOx and Emissions from N leaching and Human Sewage	Not acceptable. One possible solution is to arrange influencing factors in such a way so as to suit the existing IPCC category.
106	Find EF/Single Input – Step1 – Choosing the IPCC category: IPCC category tree levels for Energy. Level 1A2 (Manufacturing and Construction) must be expanded to accommodate a new sublevel for Desalination of Sea Water (for	Not acceptable. This kind of new plants may need to be reported under 1A2f "Other" to

	production of potable water). This industrial activity is substantial particularly in the Gulf Countries where freshwater is scant. Some of the desalination plants also produce electricity as a by-product (steam used to drive turbines). The total fossil fuel consumption by this sector in the GCC countries amounts to several hundreds of PJ and CO_2 emission is significant (several tens of millions of tones). I suggest that the influencing factors for this category could be fuel type (heavy fuel oil 3.5%S natural gas and crude oil), technology type, boilers capacities which are usually >30MW, etc.	conform to the 1996 Guidelines. One possible solution is to arrange influencing factors in such a way that this information can be included in database.
107	Single Input, Step-1, IPCC category tree levels 1B, Fugitive Emissions from Fuels, IB2 Oil & Natural Gas, Subsections IB2a (Oil), IB2b (Natural Gas) etc should contain an additional section on Oil & Natural Gas. Therefore, IB2c should be Oil & Natural Gas. Venting & flaring should be moved to 1B2d. Other to 1B2e. The reason for this is that some of IPCC EFs, were computed for the combined (Oil & Natural Gas) sector. Moreover, I am unable to see any utility for 1B2d (Other)?	Not acceptable, but it is necessary to discuss where to accommodate emission factors for "Oil & Natural Gas".

<Treat some IPCC sub-source categories as influencing factors>

There is a suggestion that some IPCC sub-categories at the most detailed level should be treated as main influencing factors (in STEP 3) rather than in the IPCC category selection (in STEP1).

No.	Comments	Possible solutions
3	Category 4B manure management: wouldn't it be better to use 4B1-13 as main influencing factors?	Not recommendable. It would be better to stick to the existing IPCC category.

<Highlight only the selected IPCC category on the screen>

No.	Comments	Possible solutions
4	If a main IPCC category has been selected it would be clearer that the other main categories disappear from the screen. To keep the overview it would be better when selecting more detailed categories that not all the previous categories remain on the screen.	Acceptable, if technically possible.

(A-2) Comments on gas selection (STEP2)

\<Enable to choose plural gases at a time\>

No.	Comments	Possible solutions
5	In step 2 it would be great if it would be possible to select more than 1 greenhouse gas. This would be useful in Agriculture. (E.g., Select CH4 & N2O at a time.)	Acceptable, if technically possible.

\<Improve indication of record count in "status" statement\>

No.	Comments	Possible solutions
6	Record Count in "status" statement can be misleading - At the point when you select the gas you want factors for, I found the emission factor count associated with the "status" text somewhat misleading: -First you select the gas from the dropdown list. -The dropdown box doesn't retain your choice, but the gas name appears in a small table below the dropdown box. - The "status" statement below the table implies that there are "X" factors for the chosen gas and category. The "X" actually refers to your initial category choice. This may be a minor point, but I remember seeing this count and then being confused when I went to the next screen and got 0 hits.	Acceptable. (It is technically possible by replacing option buttons with classical buttons.)

\<Improve user-friendliness\>

No.	Comments	Possible solutions
7	In the drop-down box selections, the order of gases listed should be that used for IPCC inventory reporting rather than alphabetical order – ie: Reported Greenhouse gases: CO2, CH4, N2O, HFCs, PFCs, SF6, Precursors and other pollutants.	Acceptable.
8	It would be useful, once a gas has been selected that the Search button be visible on screen. User currently has to scroll down to determine if the selection has been successful and to access the search button.	Acceptable.

\<Change NOx to NO$_2$ in the list\>

No.	Comments	Possible solutions
108	Nitrogen Oxide (NOx) molecular weight (30.01) in error. Molecular weight of NO = 30; NO$_2$ = 46. Delete NOx, replace with NO$_2$ and change molecular weight from 30.01 to 46.	The convention in the 1996 Guidelines is that NOx (NO+NO$_2$) emissions from fossil fuel combustion are expressed on a full

| | | molecular basis assuming that all NOx emissions are emitted as NO_2 .

Therefore, a possible solution is to retain "NOx" but change its molecular weight to 46 with an explanatory note. |
| --- | --- | --- |

(A-3) Comments on the influencing factors selection (STEP3)

<Improve/change the way to indicate "CORINAIR-split">

Some reviewers made comments on "CORINAIR-split".

No.	Comments	Possible solutions
9	As for fuel definition, in existing pilot version the fuel categories from the IPCC Guidelines are mixed with the NAPFUE code used in CORINAIR. I think that the IPCC fuel definition should be preferred (e. g. to mark the IPCC definition by capital letters, while other definitions by ordinary letters).	Acceptable. Mark the IPCC definition by capital letters, while other definitions by ordinary letters.
10	So-called "CORINAIR split" factor was non-adequately preferred over against "main influencing factors". E.g. a technological attribute "Dry bottom boiler" should be used as "main influencing factor" rather than "CORINAIR split" factor. I think that "CORINAIR split" items should be moved to corresponding "influencing factors" as far as possible.	To be discussed.
11	CORINAIR split category catalogue should work in other form; it would be better to have information about the SNAP positions and only logically joint split of the category.	To be discussed.

<Enable inclusive search rather than exclusive search>

Under the current setting, only those data meeting all selected influencing factors will be presented exclusively. Namely, if two influencing factors "A" & "B" are selected in the STEP 3, then only the data meeting "A" AND "B" will be retrieved. It was suggested that we should change the setting so that we can retrieve the data meeting "A" OR "B".

No.	Comments	Possible solutions
12	Selection: Agriculture → agricultural soils → direct soil emissions → nitrous oxide.

Entering a selection for 'Climate' and 'Country' in the 'Additional influencing factors' yields some strange results: | Acceptable, if technically possible.

It may be better for users to be able to |

	- If 'Additional influencing factors' temperate climate and developed countries are specified, NO EF are found.	implement both "AND" search and "OR" search depending on their needs.
	- If only temperate climate as 'Additional influencing factor' is specified only the EF for organic soils (in temperate regions) is found.	
	- If only developed countrie s is specified as 'Additional influencing factor' only the fraction of crop residue that is burned rather than left on the field (for tropical regions) is given.	
	<u>One would expect, that if you perform a search for e.g. temperate climate, developed country, you would get **all** the EF **except** those that are specific for tropical regions and developing countries. Now you get only those EF that are specific for temperate, developed countries but not the non-specific ones (i.e. those EF that are the same for temperate/tropical and developed/developing)</u>. An example to clarify: if a enter temperate/ developed country as additional influencing factor, I certainly expect to get the EF for direct soil emission (0.0125 N2O kg^{-1} N input) and the EF for emission from cultivated organic soils (5 kg N2O ha^{-1} y^{-1}). This is now not the case. So, In the case 'temperate climate' and 'developed country' are specified as 'Additional influencing factor' the DB search function should look like: Search [allEF] – search [EFtropical] – search [Efdeveloping]. Where it now looks like: search [Eftemperate] + search [EFdeveloped], a search that excludes the non-specific EF.	

<Seek better use of the "Ignoring the influencing factors" option>

Some comments refer to practical usefulness of the "Ignoring the influencing factors" option.

No.	Comments	Possible solutions
13	In the option "Search step by step by specifying the IPCC category, gas and set of influencing factors" the search operates without problems until arrives the moment of the influencing factors selection. Here one must to know the word that must be written in the corresponding cell. This requires a detailed knowledge of the IPCC Guidelines or to work the EFDB together with the IPCC Revised Guidelines and the Good Practice Report, what makes unnecessary, in many cases, the use of the EFDB. <u>In many cases to accede to the EF, one must to select "ignore influencing factors". This option of "ignoring" acquires thus more practical advantages than the selection of the "influencing factors"</u>. This is not in correspondence with the indicated search option that in its last step indicates "to specify the set of influencing factors". Some possible options to facilitate the search could be:	Acceptable. In other words, it would be better to change the flow of the searching steps as follows. **STEP1:** IPCC category selection **STEP2:** gas selection Here, <u>before going into Step3,</u> list up the data records with indication of relevant influencing factors for each.

	a) That before the selection of the "influencing factors", appear all the EF records existing and after to this step, if the user wishes, to effect a most specific search according to the selected influencing factors. b) To indicate with more clarity when (in which moment) to use the option of "ignoring the influencing factors" (before selecting these or after?). As I indicated previously now, in many cases, from the practical point of view it is more convenient to ignore them because appear with rapidity all the EF records available in the base. I suggest analysing these aspects.	**STEP3:** influencing factors selection, or directly retrieve necessary data from the list.
14	In existing arrangement, if none influencing parameter is chosen (only sub-sector and gas are marked), no resulting records usually appears (only record with all missing factors). I would suggest to display about 30 initial records for marked sub-sectors and marked gas (for better orientation of user) even in case that no influencing factor is selected. It could help to user find suitable influencing factors for the optimal final choice.	The same as above.
15	The option "ignore influencing factors criteria" should appear in a 3rd blue box also highlighted. As it is now is hard to see it.	Acceptable.

<Make the lists of influencing factors for specific sources more appropriate>

Many comments were received on source-specific influencing factors. In relation to this, the lists of the influencing factors for each IPCC source category were perused at the meeting. (The lists of influencing factors were set by the IPCC categories, not by the emission factors or other parameters.)

No.	Comments	Possible solutions
16	I think it should show for each influencing factor (fuel type, corinair, etc.) only the relevant options and not all the list. For example for aviation it should show the list of fuels that have emission factors like kerosene, aviation gasoline, etc. but not steam coal, charcoal, agricultural wastes and others.	To be discussed.
17	If the database is to assist countries in meeting good practice, it is critical that adequate information on the influencing factors is entered into the database. Without this information countries cannot evaluate which emissions factor is most appropriate for their situation. This is a flaw with many of the current IPCC default values, as without the source documents (many of which are difficult to access) you cannot determine this critical information. The current IPCC guidelines often have limited information on influencing factors and unfortunately the pilot database appears to be reinforcing the current restrictions. For example: in the Guidelines and pilot database the N_2O emissions for Direct Soil Emissions from Agricultural Soils has no influencing factors.	To be discussed. The default values in the IPCC Guidelines should be contained in the database even though those are not accompanied by sufficient supporting information.

	However, factors such as soil type, climate and management or application practices will have a significant impact on the rate of emissions. The database should be set up to prompt for this information when data is being entered into the database. It may be useful to engage technical experts in the relevant sectors to develop lists of key influencing factors for each emission source and integrate these into the database.	
109	Ideally the EFDB should be designed in a way that gives the Emission Factors a dynamic nature relative to their analogues in the published literature (IPCC Guidelines 1996, Good Practice Guidance 2000, and other EFs databases). Users of the EFDB should not be satisfied with only finding a suitable EF and applying it, but must have the additional flexibility to adapt the factor to suit their special circumstances. This property may require a closer look at the Influencing Factors and Additional Influencing Factors functions in the EFDB. If we take the Energy sector (Combustion of fuels) for e.g. the IFs and additional IFs should contain enough data concerning the physical and chemical characteristics of fuels used (e.g. net calorific value, density, C content, S content etc). Additional data on the technology used including pollution control technology efficiencies, proportions of oxidised and fixed C are also useful. This way, more realistic and defendable EFs could be developed and better GHG inventories compiled.	Acceptable. Try to elaborate IFs to the extent possible. Encourage submission of new data with information on IFs in detail. The default values in the IPCC Guidelines should be contained in the database even though those are not accompanied by sufficient supporting information.
18	**Land Use Change & Forestry 5A temperate forest.** In the main influencing factors tree species should be foreseen. Recently in this category a lot of discussion goes to "expansion and conversion factors". These are crucial to calculate C sequestration in forests. I think the EFDB should allow to have future input for this factors.	Acceptable. How to deal with the LUCF sector that is being elaborated in the LULUCF-GPG project?
19	The influencing factor is a very complicated issue. You know it varies with different region and natural conditions as well as the measurement itself. As far as the **methane emission from the rice field** is concerned, the emission factor is affected by water-flooded types, climate conditions and even fertilizer application etc. So in this regard, more detailed criteria to describe the influencing factor should be given.	Acceptable. Include these factors.
20	Some basic EF are missing. For example, when looking at the following IPCC category **"Energy - Fuel Combustion Activities" for "CO2"**, "Ethane" or "Orimulsion" are missing. I thought that all default IPCC emission factors would be automatically included in the database.	Acceptable. Include these factors.
21	I found the list of fuels (when IPCC Category "Energy" is selected) a bit confusing: Fuels should be precisely defined. For example, if someone is looking for "Lignite", what should be selected "Lignite and Sub-	Should be corrected appropriately. To be discussed.

	bituminous coal" or "Brown coal / Lignite"?	
22	When selecting fuel type from drop-down menu, "Brown coal/lignite" is listed, however "Black Coal" is not. Presume black coal is being listed as "Hard Coal". It would be more informative and consistent to also include the term "Black Coal" in the fuel type selection listing.	Should be corrected appropriately. To be discussed.
23	I found the list of fuels (when IPCC Category "Energy" is selected) a bit confusing: Fuels are ranked by alphabetic order. I feel this is confusing. For example, if someone is looking for "waste from biomass", on the top of the list there is "Agriculture wastes" and at the end of the list "Wood Waste". I feel that fuels should be ranked by type (for example: coal products, oil products, gas, combustible renewables, wastes)	Should be corrected appropriately. Namely, sort the fuels in alphabetic order.
24	**Agriculture ->Domestic Livestock ->Enteric Fermentation -> Methane Emissions** In the IPCC Guidelines the emission factors of methane in the enteric fermentation are given for two country categories "developed and developing". Is required much knowledge of the Guidelines to know that in "additional influencing factors" in the word "country" one must to write "developed or developing" if one wishes to obtain the emission factors. Furthermore, with the exception of cattle, where there is regional detail, until the moment is the way to obtain the factors, since either they are available according to the climatic conditions. Now to find the EF (18 records) is necessary to select "ignore influencing factors" and in "detail" select the corresponding a developing or developing countries. In my opinion this option is more complex and less rapid than if the conditions "developed or developing countries" could be selected before as appear in the Guidelines. This is an important initial criterion for the selection. To solve this problem and to facilitate and to improve the usefulness of the EFDB I suggest the following: a) In this source category to include in the word "<u>country</u>" the options "<u>developed / developing</u>" so that they could be selected, according to the case, with more facility. b) Due to its importance, to change that selection option toward the "Main influencing factors".	Acceptable. Include this factor.
25	**Agriculture -> Manure Management (4B)** For the types of animals that have "<u>country</u>" as "additional influencing factor" (sheep, goats, camels, horse, mule and asses), can be convenient to include the suggestion made previously of including also the condition "<u>developed /developing</u>" between the possibilities of selection. This facilitates the search of the emission factors for this category of source.	Acceptable. Include this factors.

26	**Agriculture -> Rice Cultivation (4C) -> Irrigated (4C1) -> Continuously flooded (4C1a)**	Acceptable.
	It is indicated that "there are no main influencing factors defined for this IPCC category". However in that category there is an important factor that is the condition of soils "with organic amendments" and "without organic amendments". I suggest including those conditions as influencing factors. If are not ignored the influencing factors, the search provides only the Scaling Factor (1.0). To obtain the EF (12 records) necessarily one must to select "ignore influencing factors".	Include these factors.
27	**Industrial Processes (2) -> Lime Production (2.4)**	To be discussed.
	Between the main influencing factors is found de Lime Type. However, if in the cell of Lime Type is written "quicklime or dolomitic" is displayed the message "There are no emission factors matching the selected criteria". To obtain the EF records available is necessary to select "ignore influencing factors".	Include this factor?
28	**Industrial Processes (2) -> Production and Use of Miscellaneous Mineral Products (2.7) -> Asphalt Roofing Production (2.7.1)**	To be discussed.
	In "additional influencing factors" only is included the CORINAIR Split Category. In my opinion could be included the conditions "saturation with spray and saturation without spray" in correspondence with the EF recommendations in the IPCC Guidelines. Also in this source category is necessary to select "ignore" for obtaining the EF records available.	Include this factor?
29	**Industrial Processes (2) -> Carbide Production (2.11)**	To be discussed.
	In my opinion the type of carbide (calcium or silicon) is one of the initial characteristics that could appear to facilitate the search. It does not appear either between the influencing factors. Also for to obtain the EF records available is necessary to select "ignore influencing factors".	Include this factor?
30	**Industrial Process (2) -> Production of other Chemicals (2.12) -> Sulfuric Acid.**	To be discussed.
	When it is selected "Product" (Sulfuric Acid) between the "main influencing factors" and SO2 as gas, is displayed the message that there is no available EF, however, upon selecting "ignore" are obtained 17 EF records linked to the H_2SO_4. The option "ignore" has more advantages than the identification of the specific product.	
31	**Waste (6) -> Land Disposal of Solid Waste (6.2) -> Unmanaged Waste Disposal Sites (6 A2).**	To be discussed.
	When are written the options "unmanaged deep or unmanaged shallow" in "Type of Solid Waste Disposal Site (main influencing factor) is displayed the message "There are no EF..." However, if is selected "to ignore" are obtained the FE records available.	Include this factor?

32	**Waste (6) -> Wastewater Handling (6B) -> Domestic and Commercial Wastewater (6B2).** When in the influencing factors "Region" is written, for example, Latin America, or in Country is written "<u>Developing</u>" is displayed the message "There are no EF..." If is selected "ignore" are obtained the CORINAIR EF records.	To be discussed. Include this factor?
33	To include to the list of **fuel type** "<u>GAS OF UNDERGROUND GASIFICATION OF COAL</u>". This fuel type applies in Uzbekistan. May be this fuel type also applies in other countries.	Acceptable.
34	In Step 3 in Find EF, it can be specify a given climate in the combo list and try to limit this concept or all the countries would give their climate nomenclature. The same thing for the others fields. (Note by TSU: This seems to be suggesting that we should have only drop-down lists and delete the cells for free words).	To be discussed.

(A-4) Comments on the other aspects in the search process

<Doubt the necessity of options 2 & 3>

No.	Comments	Possible solutions
35	I do not really see the need of the second and third search possibilities under "Find EF".	Not acceptable. In some cases, these options may be useful.

<Clarify what the EF-ID is and why it is needed>

No.	Comments	Possible solutions
36	The code for unique EF-ID may be clarified in more detail, somewhere. It can be done with two to three lines in the Find EF – search by ID page. I find some information in the Help section – but, I think, it is not sufficient.	Acceptable.
37	Whatever I type the id - like example 1, 2, 3, 4, always I see the same page with same information. I think, if the ID is not there / correct – displaying the information - as ' not a valid ID', like stuff may help.	Maybe a technical error. Correct it appropriately.
38	What is this EF ID#? Is this the same as the number in the Emission Factor Detail? Could you please provide us the list or it is suggested that a complete listing of EF ID# be included in the database for easy reference.	It may be difficult and little use to make the list of EF ID#. The EF ID# is useful when you need to quickly revisit those data records you once visited. (E.g. when you want to revise the data record you submitted earlier.)

<Enable inclusive search rather than exclusive search in the Find EF option 2>

Under the current setting, only those data meeting all selected criteria will be presented exclusively. This comment is quite similar to the comment No. 12.

No.	Comments	Possible solutions
39	Selecting the IPCC revised guidelines as 'Source of data' and Europe as 'Region of applicability' yields as a result that no emission factors matching the selected criteria can be found. This is a bit odd, since it show clearly from the step-by step-procedure that the default EF for direct soil emissions, for example, are already in the database. So, at least some EF should be found. Unless, of course the DB search is programmed in such a way that only those EF from the IPCC revised guidelines specific for Europe are shown. But, since no specific EF for Europe are defined, no EF are found. This might lead future users of the DB to believe that no EF exist for Europe. Is it not better, if no specific EF are available to give at least the default values?	Address similarly to the comment No.12. See Comment No.12.

<Improve drop-down lists in the Find EF option 2>

No.	Comments	Possible solutions
40	When choosing criteria using the drop-down menus for "Data Provider" and "Source of Data", the menu items are not fully visible on the screen as the selection box appears too far to the left hence it is not immediately obvious how to scroll through the selections. It would be best if the page was optimised to be displayed so that users are not required to scroll to right to read.	Acceptable, if technically possible.

(A-5) Comments on the other aspects in the input process

<Improve user-friendliness of "Single Input" process >

No.	Comments	Possible solutions
41	In the field of production technology, product et cetera should work self creating catalogue, it is a very important solution for effective work of EFDB!	Acceptable, if technically possible.
42	I don't succeed in entering new EF. When I tried to enter it, I had the following error message: "Single input of EF into the EFDB failed due to following error(s): Some of the required information is missing". I don't know which information is required, and which one is not compulsory.	Required information categories (mandatory data fields) are indicated in bold. However, it may not always be clear enough for that purpose. We may have to come up with some better ways to indicate it.

No.	Comments	Possible solutions
43	When I created a new unit I didn't succeed in changing it, afterwards.	Currently, it is not allowed to revise the data under assessment. To be discussed.

<Include a unit which is missing from the drop-down list >

No.	Comments	Possible solutions
44	To include to the list of units "TJ/MILLIONS M3 OF GAS".	Acceptable.

<Refine the format for data submission >

No.	Comments	Possible solutions
45	With regard to the single input-step4, I have difficulty with the item "possible applicability". Other items such as "year of applicability" or "country of applicability " are easily understood. I don't know what the possible applicability is referring to, please further clarify it.	This is for other types of applicability, if any. An explanatory note may be needed.
46	If possible, I suggest to add a new usage/review information "further improvement need to be done" to describe what measures could be taken to improve its accuracy and applicability. In so doing, potential cooperation and exchanges among users could be developed.	Not acceptable. This kind of note may be written in the existing cell on "comments from data providers".
47	It is needed to make a users' manual of the web application about what screens would be shown to us or to expect. I make this comment because in Single Input data we have the information but in each step I must stop and look for the information. It can be solved if we can fill up this fist on a format before we start with the web application.	Acceptable. One possible solution is to show the format for data submission in the "Help" menu.

(B) Comments on the output process

<Improve the "Find EF – Results" table >

No.	Comments	Possible solutions
48	When adopting the concept of database uniformity (agreed by the Paris meeting), the algorithm of the EF data search seems to be acceptable in principle. Optimal structure (format) of "Find EF – Results" tables will be probably very important for successful search. It can be expected that in the first (preliminary) search a user probably will mark only one "main influencing factor" (while other options will keep not specified) and therefore he will obtain relatively many resulting records (e.g. 40). In existing format of records only a few parameters for a good orientation are visible without pushing the "details" button. I think that all "main influencing parameters" and perhaps also some most important "additional influencing parameters" (or al least their characteristic key words) should be visible directly. I hope that it will enable a better orientation for user, which is needed for the next (ultimate) search.	Acceptable.
49	Moreover, in existing pilot database no systematic sequence (order) of resulting records was recognised. I would suggest to introduce a systematic hierarchy of found records (e. g. (i) according to well defined sequence of sub-sectors (ii) according to systematic sequence of main and additional parameters (iii) sequence: default, continent-specific, country-specific EFs (continents and countries in alphabetical order)).	Acceptable, if technically possible.
50	Report titles - It might be nice to see the criteria you searched on when you get that long list of factors that match your search terms. For example, when I generated the list of factors for Fuel-Energy Combustion-CO2-US, I got 17 hits. At that point the user can select "detail" to get specific information on the individual factors. It might be nice if the table of 17 hits had a title on it which reiterated the category and criteria. If you print out these tables for future reference, it would be hard to know at a glance what you had searched on.	Acceptable.
51	Selection: Agriculture → agricultural soils → direct soil emissions → nitrous oxide

If a 'Search' is performed right after 'Step 3' is completed (so none of the 'Additional influencing factors' is selected and the box 'Ignore influencing factors criteria' is not checked), a total of 7 EF is given from the total of 11 EF available at this point. This does not seem to be very logical since you get the message that 'There are no main influencing factors defined for this IPCC category' on top of the screen. So, all 11 EF from the database should be given (e.g. EF for organic soils is not among the 7 EF that are shown after the search operation). Checking the 'Ignore influencing factors criteria' box, yields all the EF In the database (which | Acceptable. |

	implies that there are influencing factors). In this case, the notation of some of the EF is somewhat ambiguous. For example: for the 'Default emission factor for direct emission of N2O, emission factor for organic soil mineralisation due to cultivation' 2 numbers are given: 5 and 10 kg N2O ha^{-1} y^{-1}. These are the numbers for the temperate and tropical region, respectively, but this reveals only when you look at the 'detail'. <u>It probably would make the table more transparent if in the 'EF-description' column would be referred to 'temperate' or 'tropical'.</u>	
52	<u>In the result box (after the search) should appear the fuel in a column.</u> I insist in this point. It doesn't make sense a list of results with many items with exactly the same information. Try, for example this two searches: a) Energy/Fuel Combustion/Energy Industries/Petroleum reffining/CO2/Ignore influencing factors criteria b) Energy/Fuel Combustion/Transport/CO2/ Ignore influencing factors criteria It doesn't show the influencing factors, like fuels, that correspond to different EF. You will have to press "detail" to get this information for each output.	Acceptable (for Energy sector).
53	On the "Find EF Results" the selection doesn't appear. Perhaps all the selection should be presented in the IPCC category column?	Acceptable.
54	When looking at the "detail", report to DOC and report to EXCEL are presented on 2 pages. Is it possible to reduce these 2 pages into one?	Not acceptable. It may depend on the volume of information contained in the data record.
55	A summary report/record for Animal Production (4D2) is given in tabulated form which include the IPCC Category, Gas, EF Description, EF Value, EF Unit, source of data, date published and action. It takes sometime to browse the Details (Action) one by one just to check a particular animal type and a particular region. <u>It is suggested to include in EF Description, the animal type and place of applicability rather than checking all the details of every record in the Emission Factor Detail.</u> The list of records for Direct Soil Emissions (4D1), EF Description contains the detailed description.	Acceptable, but not in EF Description. It may be better to indicate it in the other additional column.
56	For FIND EF, it would be helpful to the user if the summary table also includes the fuel type particularly for the category electricity and heat production. This can replace the EF DESCRIPTION column which is blank anyway.	Acceptable, but not in EF Description. It may be better to indicate it in the other additional column.
57	The technical information table includes a reference to the *IPCC Worksheet no.* and Equation. This is misleading as the information provided is actually an 1996 Revised IPCC Guidelines Volume 3 page number reference. The term 'IPCC	Acceptable.

	worksheets' would usually refer to the worksheets provided in Volume 2 of the Guidelines, not to the summary table of default emission factors in these volumes. In relation to the Equation reference, a more precise identifier should be given as there can be multiple equations on a page.	

<Improve indication of record count in "status" statement>

A relevant comment can be found elsewhere. See also Comment No.6.

No.	Comments	Possible solutions
58	Following the steps, it shows that it contains a number of EFs for that criteria but after the next step (3); no emission factors are matching the selected criteria even by ignoring the influencing factors.	The same problem as Comment No.6? Or technical error?
59	Agriculture-Manure management-cattle-dairy cattle (4B1a): below the screen is written "number of EF covered by your criterion= 31". But if a search is performed no EFs are found.	The same problem as Comment No.6? Or technical error?

<Indicate the reason of no matching>

No.	Comments	Possible solutions
60	Sometimes the search result says that there was no matching coeff. Could we give the reason for this? It will be useful?	Not acceptable. There is no "reason".

<Rectify technical errors>

No.	Comments	Possible solutions
61	The function "report to doc" seems to work, the function "report to xls" seems not to work.	Investigate the problem and seek solution.
62	Exporting data to excel format, it report missing files elements.css and classes.css from http://www.air.sk/EFDB/styles/	Investigate the problem and seek solution.

(C) Comments on the existing data records

<Address data gaps/data deficiency>

No.	Comments	Possible solutions
63	Practically all EFs from fuel combustion, which have been inserted into the database so far, were taken from an old CORINAIR version. Excepting the case of country specific values of NCV (calorific values) practically none other value was taken from the 1996 IPCC Guidelines or "Good practice guidance". I think that the IPCC values should be inserted preferentially.	Update the data from CORINAIR, as well as import more IPCC data.
64	Moreover, many of inserted old CORINAIR EFs are out-of-date and not valid (e. g. N2O from combustion processes are evidently wrong, some of CO2 EFs are questionable). Even for countries applying CORINAIR methodology, only the latest version of UN ECE Emission Inventory Guidebook elaborated by UN ECE TFEIP (continuously up-dated and harmonised with IPCC methodology) is recommended for an adequate EFs choice.	Ditto.
65	In many categories IPCC default EFs are still missing.	Continue importing the IPCC data.
66	There are no Indirect Emission (4D3) Factors for N2O.	Try to collect relevant data.
67	I've tried the two options but unfortunately I didn't receive any thing for Ivory Coast; it probably due to the fact that I don't know very well how it works. Although it is very interesting. And I hope, it will change all our manner to work for the inventory of greenhouse gases.	Try to collect relevant data.
68	I have visited the web and found that it is more likely library of EF rather than authority of using them. The scientific and technical level is quite well. However I could not retrieve any EF in any sector when I give my country name and I did not understand why. May be it is because Mongolia did not input any IF in this EFDB. Mongolia uses IPCC default IF with little modification in same sectors. We are not able to develop own EF since it is too costly. However we are still willing to do that.	Try to collect relevant data, and encourage relevant research/measurement activities.
110	**EF Detail (ID: 1398)** CH4 Fugitive emission from Energy, Natural gas production/processing. Additional influencing factor Corinair Split Category: Drilling EF: 325 kg/well drilled. Measured EF. Region of applicability: Europe. This figure is 3 order of magnitude higher than the value reported in the IPCC Good practice Guidance (Table 2.16) for drilling emissions (0.43 kg/well drilled) what are the reasons?	Check those data and correct them if necessary or if possible.
111	**EF Detail (ID:1395)** CH4 Fugitive Emission from Natural Gas production/processing. Additional Influencing Factors: Corinair	Ditto.

	Split Category : Gas Terminals/Fugitive Emissions EF 320 Mg/Terminal. Need to specify the duration. 320 Mg/Terminal per day, month or year?	
112	**EF Detail (ID:1394).** Same as above. Measured EF, 1230 Mg/Terminal per what (duration)? Furthermore, it indicates the same conditions (as ID:1395) but different EF. This is confusing.	Ditto.
113	**EF (ID: 1390) and (ID : 1389)**. Same problem (as Comment No.112). Different EF and no influencing factors.	Ditto.
114	**EF (ID: 1937)** CO2 Fugitive Emissions from Natural Gas production/processing. Additional Influencing factors: Venting. Value, 25 Mg/Facility. Same question as above: What duration ? Need details on influencing factors.	Ditto.
115	Find EF function, fuel combustion, energy industry. **EF (ID: 2101)**. Main influencing factors, fuel type (LPG). Additional influencing factors (none). EF = 65000 g/GJ. For consistency with IPCC manuals convert value to tonne/TJ. EF = 65 t/TJ. Since this value is measured it is useful to show in the additional influencing factors: the calorific value of LPG ; C content and proportion of oxidised C in order to compare the data with country specific analogous values and hence arrive at a more accurate country specific coefficient for LPG. Similar consideration for **EF ID: 2102** (petroleum refining).	Ditto.
116	**EF (ID: 2144)**. Energy, Fuel combustion, Electricity and Heat Production. Is the EF 17 or 170,000 g/GJ? Delete the period after 17?	Ditto.
117	**EF Detail (ID: 1615)** Fuel Type : Natural Gas, Energy, Petroleum Refining. Main influencing factors: Fuel Type, Natural Gas. Additional influencing factors, Corinair Split Category: Gas turbine/ simple cycle. Value 5.9/GJ = 5.9 kg CH4/GJ. This is a measured value and hence very useful to draw parallelism with countries that have no measured EF Values. However, the reported influencing factors or additional factors are not enough to draw this conclusion.	Ditto. See also Comment No. 109.
118	**EF Detail (ID: 1402)** CH4 Fugitive Emission from Natural Gas transmission/distribution. Eastern Europe Technology 393 g/GJ. Main influencing factor, natural gas, Additional influencing factors Eastern European Technology (Measured). (In contrast,) **EF Detail (ID: 1401)** Transmission/ distribution of Natural gas? Fugitive, Additional influencing factor Western European technology EF = 20.9 g/GJ [Measured]. I wish if the influencing factors are detailed enough to draw parallel.	Ditto. See also Comment No. 109.

(D) Comments on the possible data sources/Data submitted through "Single Input"

<Explore possible data sources>

No.	Comments	Possible solutions
69	I am really not sure, where exactly, tropical forest biomass burning fits in? I am talking about burning of tropical dry deciduous / mixed deciduous forest biomass (with sometimes mixed tree species) burnt for shifting cultivation purposes, which is our research interest. I request you to clarify on the above. We have data on the above, for NOx and CH4. (data, I mean – published papers NOx (Atmospheric Environment) and CH4 (Chemosphere-Global change science) - for both of which Prof. Mitra is also a Co-Author, along with me.	Try to collect relevant data, and encourage someone to submit relevant data. Put them into appropriate category.
70	This is regarding some of the blank fields. I hope, you are in the process of updating. For example, Agriculture, Field burning of agricultural residues, sugarcane, there is no data. However, as you know, there is good amount of literature on the same (Kaufman, from Africa).	Try to collect relevant data, and encourage anyone to submit relevant data.
71	Find, search by other related information - to me, has to be updated a lot. For example, i very well know that Lacaux et al., (Data provider) had done good amount of research in Africa - esp. NOx emissions and search results gives - no emission factors. I think, it is occurring just because we are still in the process of update.	Try to collect relevant data, and encourage anyone to submit relevant data.
72	As desired, I am enclosing herewith tables of emission factors from different FIRES - such as from savannah, tropical forest, wetlands, agricultural residues, etc., along with references. You can discuss / think of the same in your next meeting of including these emission factors in ' biomass burning' category.	Assess the data/information, and import them if they are reliable enough.
73	I was trying to use EFDB but the massage I always have is there are no emission factors matching the selected criteria. In Jordan regarding EF we have made a study to identify the EF for waste sector due to the organic compound concentrated hevely in the area. I wish that we could share could this kind of information with every body.	Encourage submission of the data.
74	Our paper published in Journal Geophysical Research (105 (D13): 17,231-17,242, 2000) summarized our field measurements, in which some emissions were measured in the permanently flooded rice fields in China. I would be very happy if you could collect this paper into the database.	Encourage submission of the data.
75	The Indian emission coeff for rice paddy cultivation also follows	Encourage submission

		of the data.
	the Chinese patterns, although with much more details. Dr AP Mitra and his team of National Physical Laboratory, New Delhi, India has done excessive measurements in this regard in 1991-92 and there are several publications to this effect. Dr Surita is aware of these. In our recent publications, we have given all these coeffs. The reference details are as follows: Garg Amit, Bhattacharya Sumana, Shukla P.R. and Dadhwal V.K., (2001). Sectoral and regional Greenhouse Gases Emissions for India, Atmospheric Environment 35, 2679-2695. Garg Amit, Shukla P.R., Bhattacharya Sumana and Dadhwal V.K., (2001). Sub-region (District) and sector level SO2 and NOX Emissions for India: Assessment of Inventories and Mitigation Flexibility, Atmospheric Environment 35, 703-713. You may find them useful.	
76	**Cement production**. The raw material used in cement production may contain amounts of MgO which warrant the use of different emission factors. This is not reflected in the default values, and even the emission factors were used to calculate GHG emission from dolomite time processing. This may not reflect the actual emission values for this subsector since local dolomite may contain 20%-50% MgO. EF = 0.5503 (local for Sudan).	Encourage submission of the data.
77	**Agriculture**: The local area unit feddan = 4200 m^2 =0.42 hectare. **Landuse Change and Forestry:** The formula used for calculating annual growth rate (AGR) is as follows: AGR (tdm/ha) = VOL.per Feddan*0.42*0.5/rotational age. Where 0.5 is the conversion factor from fresh to dry weight. Rotational age is the harvest cycle in year.	Include this information in the database as a conversion factor or as a unit.
119	Emission Factors (ID 2966, ID 2967), CO_2 emission from ammonia production in Canada, Norway respectively. Add information on natural gas feedstock chemical composition, carbon content to allow accurate computation of CO_2 emission and other emission e.g. SO_2. In the State of Qatar and other GCC countries ammonia manufacturing chemical plants also produce urea fertiliser, $NH_2.CO.NH_2$, hence CO_2 produced as a by-product from catalytic reforming of natural gas is consumed as feedstock to produce urea. We are now in the process of preparing a set of country specific factors for process and combustion emissions from ammonia and urea plants. These factors will be submitted to the EFDB ASAP. Moreover, why the main influencing factors contain one data field (no drop-down box). Factors could be many including, whether urea or melanin is produced and the type of feedstock etc.	Encourage submission of the data. The list of Influencing Factors may be appropriately amended in accordance with the submitted data.

<Assess data submitted through "Single Input">

During the pilot testing, 11 data (not DUMMY) were submitted by using the "Single Input" menu. Those data need to be assessed by the editorial board before being imported into the database. (QA/QC procedures are also to be discussed in this expert meeting.

(E) Comments on other technical issues

<Set "Back" buttons as appropriate on pages>

Many reviewers raised the difficulties in going back to the previous pages. That is one of the typical technical problems that need to be improved swiftly.

No.	Comments	Possible solutions
78	This is regarding 'buttons in the different sections - for example, 'Land use Change and forestry sector' section - if the user wants to go back to Step-1 - from Step-2 - one has to compulsorily use the 'BACK TO STEP-2" button available on the webpage. However, if the user press the back button available from the browser - he cannot - the page gets expired. Instead, I think, if we can make available the back button-AVAILALBLE FROM BROWSER- (I am using internet explorer) somehow work to go back to step-1, that will certainly help. Because, most of the time, I noticed that, we click back button available from browser, rather than button available at the web page.	Acceptable (i.e. make the back button of browser work), if technically possible. Otherwise, a warning should be provided at the start of the search process that the user should use the Back and Forward type buttons on the database web page.
79	It is a little odd the "back" button on the web browser is not working.	Ditto.
80	A warning should be provided at the start of the search process that the user should use the Back and Forward type buttons on the database web page. Using the Back and Forward buttons on the web browser (as people are inclined to do) results in frustrating "data missing" dead ends.	Ditto.
81	In the current situation, if I press back button, 'if the design is perfect', it should not work at all. However, if I press back button for 7-8 times continuously, you can enter the home page again. Please check this. I may be wrong.	Not need to be corrected, since this may be not a significant problem.
82	It is currently not possible to go straight back to the Find EF start page from later pages. This should always be an option – currently you must pass back through the previous step pages, which is annoying. This is true of all 3 options.	Acceptable.
83	It is needed to have buttons to jump to step 2 to choose another gas in the same category, or jump to step 1 to choose another category.	Acceptable.
84	On the EF 'details' screen there is the option to convert the html to a word or excel document, by selecting either the 'Report to DOC'	Acceptable. Open the reporting

No.	Comments	Possible solutions
	or 'Report to XLS' button. Selecting one of these buttons resulted in the relevant document type being created OK on my PC, but also closed the web browser window with no way for me to return. This resulted in me having to re-launch my browser and log back on to continue - VERY frustrating. <u>It would be better if these documents were opened in new windows so that the web-browser remained open and on the same page</u>.	documents in new windows so that web-browser remained open and on the same page.
85	When I try to export data to a word document and when get back to seek another emission factor the application (Internet Explorer 6.0) collapsed. The word document displays itself on the same browser, I will try to configure my browser to save it to hard drive to solve this problem.	Ditto.
86	If the "number of emission factors covered by your criteria; 0", then there is no need to Search for EFDB EF but instead there should be an option to go to the previous step or to go back to the main menu.	Acceptable.
87	When a search produces no results, a page is presented with no back navigation buttons, and if the browser back button is used, then the search string is lost. Navigation buttons should be provided on nil search result pages.	Acceptable.

<Assist users in selecting appropriate browsers>

One of the technical problems that deserve careful consideration and investigation is the browser-related one. If Netscape v4.7 does not work appropriately for the EFDB, it should be necessary to encourage users to upgrade the browser, or to change the design of the EFDB so that Netscape v4.7 can also work properly.

No.	Comments	Possible solutions
88	<u>You may want to warn people that the website works best with Internet Explorer (version 5.5?)</u>. At work I use IE, but at home I use Netscape and I got very different results depending upon which Browser I used. If someone does use Netscape it appears they should use version 6 or later. I tend to avoid version 6 myself because it is clunky and usually go back to Netscape 4.7. (I think a lot of people might do the same.) However, I hear Netscape 6.1 is supposed to be less buggy and clunky than Netscape 6.0, so maybe that should be the recommended Browser for Netscape users. Most of the problems I found are due to using Netscape – but in any case I thought it would be good for you to know what I found.	See the chapeau of this table.
89	Dropdown arrows don't appear in control box - When doing a search in which influencing factors are among the search terms, in Netscape 4.7, the dropdown arrows don't appear until you put your cursor in the control box. Thus, it appears as if you have to know the exact search term - the embedded lookup list is not apparent. Netscape 6.0 is fine with this.	Ditto.

No.	Comments	Possible solutions
90	XLS and DOC reports not created - I could not generate the XLS and DOC reports from Netscape 4.7 Forgot to check 6.0	Ditto.
91	Blank screen appears when no matches - If I entered search terms for which there were no matches (under search type 2), I got a blank screen with no message. For example, if I tried to get all the Emission factors for Region = "Africa" and Country = "Germany", the set would be null. However, no message appears to tell me this - it is almost like a dead-end. I don't know if this is only a Netscape problem.	Ditto.
92	Emission Inputs stops at Step 3 – In Netscape 4.7 I could not get past step 3 when I tried to enter a new emission factor. I just got a blank screen. Netscape 6 was fine with this.	Ditto.
93	Emission Inputs required fields not obvious - In Netscape 6.0 the required or mandatory fields are not bold. I could not tell which fields were required.	Ditto.
94	From "Find EF - Step 3 - Choosing Influencing Factors" the combo list (drop-down list) is not shown on Netscape 4.7.	Ditto.

(F) Miscellaneous

<Use appropriate terms >

The EFDB will contain not only so-called "emission factors" but also the other parameters needed to estimate GHG emissions/removals. How to refer to these parameters is questionable.

No.	Comments	Possible solutions
95	By the term EF is usually understood an (emission)/(activity value) ratio. When referring to other parameters needed for emission calculation (e.g. country specific values of Net Calorific Values mentioned above), it should be indicated (e. g. by a flag: other parameter).	Acceptable. Consider what wording would be adequate.
96	The results form the search are all called EF, but actually there are EF and default values for other Parameters, two distinctly different things. Maybe it is better make a distinction between these two types of numbers?	Ditto.
97	Agriculture-Agric. Soils- animal production: The EFs shown here are NO EFs, but manure N excretions factors!!	Ditto.

<Enhance accessibility of developing country experts to the EFDB>

Some experts from developing countries reported their difficulty in accessing the database quickly. Maybe one solution would be to regularly produce CD-ROM version of the database for distribution to those experts, as proposed in the previous meeting held in Paris, on 2-4 July 2001.

No.	Comments	Possible solutions
98	I am taking to much time to test the prototype because each step takes to long. Maybe it's my connection that is not so good. (Brazil)	One possible solution is to regularly produce CD-ROM version of the database.
99	The prototype on line is very slow for intery of data and information. I suggest in the future the package to be in a CD-ROM if it is not of high cost. (Sudan)	Ditto.
100	In my country (Niger) Internet works very slowly.	Ditto.
101	I found it extremely slow to access the database, I'm not sure what's the reason behind it. Maybe my computer and network have some problems, but I have no problem to get online such as Yahoo etc. I wonder it is associated with the database itself. (China)	Ditto.
102	Could we reduce the steps in the search process? We can ask the choices in the same frame using drop-down boxes (like the office format). The present method is very time-consuming, sometimes testing the patience of the person.	Ditto.

\<Others\>

No.	Comments	Possible solutions
103	The database is convivial. But <u>I have problem to get help on the GHG emission factor construction methods</u>. It is very important to include this point in the help procedures for African countries. My country has presented the first communication on climate change during the last COP. The most problem for the preparation of this paper is the determination of GHG emission factor which represent my country GHG emission. Knowing exactly the method will improve the quality of the data.	To be discussed. This issue may not be within the scope of this project.
104	Could we have a small demonstration module (to search for a coeff) which is very short and crisp?	To be discussed.
105	Pilot database as a whole seems to be oriented rather on the older version of CORINAIR methodology (CORINAIR94) than to the required IPCC methodology. It can be demonstrated e. g. by following examples….: (see Comments No. 9, 10, 63, 64) .	To be discussed.