Report on Laos PDR Workshop on Material Flows Accounting, 13th – 16th November 2017, held at the Don Chan Palace Hotel

The main purpose of the workshop was to build capacity in the appropriate statistical offices of the Lao PDR with regard to Economy Wide Material Flows Accounting (EWMFA). It was also intended to use the workshop to test the then current draft of a new Global Material Flow Accounting Manual, and get feedback on it. As it was known before the workshop that local statistical capacity would be limited, the workshop was skewed heavily towards dealing mainly with the basic direct physical flow accounts. This is reflected in the original programme plan, attached as appendix 1.

At least 20 people attended the workshop at some point, with at least 10 officially certified as trained at the end. I didn't receive an official attendance list, although this was requested several time in the weeks leading up to the workshop, so I have attached a photo of some (but not all) of the attendees, which can be followed up on if anyone needs to try and secure a comprehensive list from MoNRE. I can only note below a few of the key attendees with whom I had significant one-on-one and email interactions.

Khamphanh Nanthavong – Director General of Department of Pollution Control (MoNRE, mainly attended open the event)
Dr Chanthaviphone Inthavong - Deputy General Manager at Center of Information of Natural Resources and Environment, (MoNRE, main high level official with responsibility for the event)
Ekvinay Sayaraj - Chief of Information Center, (MoNRE)
Dr Vilay Vannaladsaysy, (Faculty of Engineering, National University of Laos)
Xaysackda Vilaysouk – (Murakami Laboratory, School of Engineering, University of Tokyo)
Johannes Bender - Integrated Advisor on Information Systems (MoNRE)

Also, a last minute visit was arranged on afternoon of the day I was scheduled to depart, with the Ministry of Energy and Mines, to ascertain whether there was scope for his department to provide data for the minerals accounts, and to share what had been established with regard to metal ores accounts in the workshop. The official with whom we met I can only identify as Vongkham (?) – (Ministry of Energy and Mines).

On the first day it became apparent that the restricted scope of the program really needed to be restricted even further, if we were to leave the workshop with concrete progress on at least one important aspect of EWMFA. The main reasons for this were the very limited English of most participants, and their general unfamiliarity with EWMFA. The former meant that we needed to do full serial translation of the presentations into Lao, halving the total amount of material that could be effectively delivered, while the latter meant that little prior knowledge could be assumed, further reducing the rate of learning. The decision was taken to concentrate almost entirely on building capacity in assembling the domestic extraction (DE) accounts, as these are both the simplest and most fundamental of the accounts. Treatment of all other topics was cursory, and the time saved (most of days 3 and 4) devoted to work in small groups on the practical assembly of DE accounts, under close supervision.

While the participants did use the draft manual to some extent, most of the real progress achieved in assembling the draft DE accounts came about due to the intensive instruction facilitated by Xaysackda Vilaysouk, and also to an extent by Johannes Bender (with me providing input via them). Xaysackda's success is attributable to his pre-existing thorough knowledge of EWMFA going into the

event, coupled with his high level of English and native Lao. Not only was he was able to deliver highly effective instruction to all working groups, but he was extremely effective in translating the presentations, in a way that would not have been possible for someone who did not have such extensive domain knowledge, no matter how good their language skills. The presence of Johannes Bender was also a great help to the non-metallic minerals group he worked with, as he is embedded in MoNRE, and so has long established daily working relationships with the Lao officers, which will be ongoing. The delivery of a draft DE account for 2014 (see appendix 2) at the end of the workshop would never have been achieved without these two participants. This is an important point, as the availability and presence of such people cannot be assumed for future workshops. Both attended as a result of last minute arrangements.

Feedback on the new manual.

One consistent theme was that, for the officers involved in practical assembly of the accounts, more, and simpler worked examples would be of great value.

Largely implicit (although stated by at least one participant with regard to much of Chapter 1) was that much of the theoretical and broad contextual material was superfluous for the people charged with compiling the accounts. It would however be premature to recommend removing much material, as those to whom it might be of interest/relevance are likely not at the level of the officers charged with basic compilation. A better solution over the longer term is likely to be creating a separate book of basic, largely theory free worked examples.

Feedback from this workshop necessarily only covered the early (Intro. and DE) sections of the manual, as no other accounting was attempted. The Lao PDR workshop was probably not the best test for the manual, because, as outlined above, it was to a large extent sidelined in the practical compilation work, with direct personal instruction the main driver of progress.

Other

In the discussion with the Ministry of Energy and Mines officer the day after the workshop, I think my role was largely symbolic. It was conducted entirely in Lao, and I was not called upon to ask or answer any questions. Talking to Xaysackda after the meeting, it seems that it was nevertheless probably productive in the sense of establishing personal relationships between the three Lao principals present (Chanthaviphone Inthavong, Xaysackda Vilaysouk, and Vongkham (?)), and that this is apparently important for getting access to much relevant data in the Lao PDR. The process was largely opaque to me, so no further interpretation is warranted here.

The workshop itself was heavily dominated by people from the MoNRE so far as I could tell, with the exception of an academic form the Lao National University involved with biomass. Within MoNRE, it was my understanding that it was the “Information Center” which had to a large extent been definitively assigned responsibility for it, at a reasonably late stage, and dominated attendance.

Recommendations / observations

Feedback received on the workshop has been positive, and there has recently been a follow-up enquiry from personnel in the Economic Statistic Department. The workshop overall was successful,

in that it established a draft DE account. The success of the workshop was however largely dependent on some lucky coincidences which cannot be relied upon for future workshops.

Laos was the first in the current series of capacity building workshops, and so not an ideal test case. For one, the materials for the webinars, which were supposed to form an important preparatory stage prior to the in-country workshop, were only ready less than two weeks in advance. In the event, nobody from any Laos NSOs found themselves able to attend the two webinar time slots scheduled for them.

Now that a general format for preparatory webinars is well established, however, I think they could serve a crucial screening purpose. Ideally, at least one webinar should be conducted long (several months) in advance of any decision being made to hold an in-country workshop. The purpose of this would be to better define the capability and needs of relevant NSOs well in advance, and to give the NSOs ample time to become engaged and do what they need to in preparation. The decision on whether an in-country workshop should take place should be contingent upon response to the preparatory webinar and follow up correspondence. This view is further reinforced by the fact that an earlier EWMFA workshop for Laos, planned for October 2016, was cancelled by the Lao side at a late stage, with considerable wastage of resources.

If resources are available for follow-up work to further build / reinforce EWMFA capacity in Laos, they would probably most efficiently used by responding to direct and specific written queries from the officers directly responsible for compiling the accounts. Importantly, this would ensure that the most relevant person(s) is available, actively engaged, and to some extent prepared.

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Appendix 1 – Workshop Programme

UN Manual for Material Flow Accounting

Country Case Study - Laos

Draft Agenda Webinars (6-7th November 2017) and Country Visit

13th-16th November 2017

Venue: Don Chan Palace Hotel, Vientiane Capitol

https://www.donchanpalacelaopdr.com/

Agenda Laos country visit 13-16th November 2017

Day 1, Monday, 13 November 2017:

9.00 – 12.00 Morning

- Opening remarks from Mr. Samaychanh Boupha, Head of the Lao Statistics Bureau (NSO).
- Opening remarks from Mr. Chanthaviphone Inthavong, Deputy Director General, Natural Resource and Environment Information Center (NREIC)
- Introduction to Physical Accounts and why they are important. (CSIRO EW-MFA instructor)
- Overview of Domestic extraction, with feedback from Ministry of Natural Resources and Environment (MONRE) on current work and ongoing processes relevant to these accounts
- Refinement of the agenda of the next 3.5 days.

13.00 – 16.30.00 Afternoon

Begin working through DE accounts section of manual sequentially (biomass -> fossil fuels -> metal ores -> non-metallic minerals). Plan is to have explained in detail initial tasks for biomass and fossil fuels accounts by end of day 1.

- Domestic extraction of biomass accounts (requires representatives from environmental statistics, agricultural statistics, forestry statistics and fishery statistics)
- Domestic extraction of fossil fuels (requires representatives from environmental statistics and energy statistics)

Day 2, Tuesday, 14 November 2017:

9.00 – 12.00 Morning

Continue working through DE accounts section of manual sequentially (planned metal ores -> non-metallic minerals).

- People responsible for assembling earliest modules (planned to be biomass and fossil fuels) excused to go to their offices / elsewhere to work on compilation tasks.
- Domestic extraction of metal ores (requires representatives from environmental statistics and mining and querying statistics)
- Domestic extraction of non-metallic minerals (requires representatives from environmental statistics and mining and quarrying statistics)

13.00 – 16.30 Afternoon

- People responsible for assembling earliest modules (biomass and fossil fuels) to report back on progress and work through compilation issues with EW-MFA instructor. (Requires the same people as the 15.00 – 18.00 session preceding day)
- Feedback on utility of manual for biomass and fossil fuels
- People responsible for assembling latter modules (metal ores and non-metallic minerals) excused to go to their offices / elsewhere to work on compilation tasks.

Day 3, Wednesday, 15 November 2017:

9.00 – 12.00 Morning

- People responsible for assembling later modules (metal ores and non-metallic minerals) to report back on progress and work through compilation issues with EW-MFA instructor (Requires the same people as the 10.00 – 13.00 session preceding day).
- Feedback on utility of manual for metal ores and non-metallic minerals.
- Introduction to physical trade compilation for all material groups (requires representatives from environmental statistics and trade statistics)

13.00 – 16.30 Afternoon

- People responsible for assembling physical trade data excused to go to their offices / elsewhere to work on compilation tasks.
- Assessment of where all DE accounts are, and working through outstanding issues for all DE categories (all involved in assembling all modules of DE accounts should be present).

Day 4, Thursday, 16 November 2017:

9.00 – 12.00 Morning

- People responsible for assembling physical trade accounts modules to report back on progress and work through compilation issues with EW-MFA instructor.
- Introduction to Material footprinting and IO tables. (Requires representatives from environmental statistics and economic supply and use / input-output statistics)

13.00 – 16.30 Afternoon

- Brief summary of the manual sections on material stocks, and emissions.
- Final feedback session on utility of manual
- Wind up session, including identification of which specific follow-up and / or site visits are required for the following day (EW-MFA instructor to stay in Vientiane on 17th November for this purpose).

Appendix 2 – Draft DE accounts for Lao PDR for 2014

Material category	Sub-categories	Description	Sub-categories level 2	Level 2 Description	Lao's Working Group	UNEP**	X. Vilaysouk**
A.1. Biomass	A.1.1	Primary crops	A.1.1.1.1	Rice	4,002,425	4,002,425	5,414,865
			A.1.1.1.2	Wheat	1,412,440	-	
			A.1.1.1.3	Cereals n.e.c.	17,035	1,412,440	
			A.1.1.2	Roots and tubers	1,872,240	1,741,290	1,872,240
			A.1.1.3	Sugar crops	180,465	1,840,465	1,840,465
			A.1.1.4	Pulses		20,540	
			A.1.1.5	Nuts		-	
			A.1.1.6	Oil bearing crops		101,545	98,875
			A.1.1.7	Vegetables	1,500,460	978,685	1,550,460
			A.1.1.8	Fruits	979,483	757,470	846,620
			A.1.1.9	Fibres	5,225	4,289	1,225
			A.1.1.10	Other crops n.e.c		-	405,555
			A.1.1.11	Spice - beverage - pharmaceuti cal crops	7,935	111,284	
			A.1.1.12	Tobacco	63,355	41,511	
	A.1.2	Crop residues (used) and fodder crops	A.1.2.1.1	Straw	3,201,940	7,600,629	
			A.1.2.1.2	Other crop residues (sugar and fodder beet leaves etc.)		2,704,619	5,234,060
			A.1.2.2.1	Fodder crops (including biomass harvest from grassland)		-	554,466
			A.1.2.2.2	Grazed biomass	52,648	1,527,486	4,453,636
	A.1.3	Wood	A.1.3.1	Timber (Industrial roundwood)	3,400,000	2,994,958	2,516,480
			A.1.3.2	Wood fuel and other extraction	4,143,563	4,011,815	3,775,588
	A.1.4	Wild harvest n.e.c.	A.1.4.1	Wild fish catch	150,592	44,390	449,521
			A.1.4.2	All other wild aquatic animals catch		-	
			A.1.4.3	Wild aquatic plant harvest		-	
			A.1.4.4	Wild terrestrial	2,258		

				plant harvest n.e.c.			
			A.1.4.5	Wild terrestrial animal catch	77,860		
A.2. Metal ores	A.2.1	Iron ores				1,853,000	1,401,893
	A.2.2	Aluminium ores					
	A.2.3	Other metal ores			23,766,292	32,097,386	25,082,514
M.2. Metal content	M.2.Fe	Contained iron					
	M.2.Al	Contained aluminium					
	M.2.Ag	Contained silver					
	M.2.Au	Contained gold					
	M.2.Cr	Contained chromium					
	M.2.Cu	Contained copper					
	M.2.x	…..Contained x where x ix a metallic element					
A.3 Non-metallic minerals	A.3.1	Ornamental or building stone				-	
	A.3.2	Carbonate minerals important in cement	A.3.2.1	Chalk		-	3,974,710
			A.3.2.2	Dolomite		-	
			A.3.2.3	Limestone	1,265,357	1,216,193	2,010,185
	A.3.3 (?)						
	A.3.4	Agricultural or Industrial minerals n.e.c.	A.3.4.1	Fertilizer minerals n.e.c.	310,416	463,261	391,748
			A.3.4.2	Chemical minerals n.e.c.		50,532	
			A.3.4.3	Industrial minerals n.e.c	30,610	-	
	A.3.5	Salt			8,823	115,254	50,930
	A.3.6	Gypsum			584,338	761,377	707,908
	A.3.7	Clays	A.3.7.1	Structural clays and their products	1,126,000	177,757	2,977,202
			A.3.7.2	Specialty clays		-	
	A.3.8	Sand, gravel, crushed rock	A.3.8.1	Industrial sand and gravel		-	
			A.3.8.2	Sand gravel and crushed rock for construction	19,750,931	2,967,670	58,656,327
	A.3.9	Other non-metallic minerals n.e.c.			1,511	-	156,180

A.4 Fossil fuels	A.4.1.1	Brown Coal	A.4.1.1.1	Lignite (brown coal)	99,144	647,827	110,317
			A.4.1.1.2	Other Sub-Bituminous Coal		-	
	A.4.1.2	Hard Coal	A.4.1.2.1	Anthracite	105,564	294,840	99,144
			A.4.1.2.2	Coking Coal		-	
			A.4.1.2.3	Other Bituminous Coal		587,196	
	A.4.1.3	Peat			226	-	300
	A.4.2	Crude oil, condensate and natural gas liquids	A.4.2.1	Crude oil		-	
			A.4.2.2	Natural gas		-	
			A.4.2.3	Natural gas liquids		-	
	A.4.3	Oil shale and tar sands	A.4.3	Oil shale and tar sands		-	156,061

* All data is for year 2014

** Data sourced from UNEP MFA database

*** Data sourced from Vilaysouk, X., Schandl, H., & Murakami, S. (2017). Improving the knowledge base on material flow analysis for Asian developing countries: A case study of Lao PDR. RESOURCES CONSERVATION AND RECYCLING, 127, 179-189

Photo of sub-group of attendees on final day or workshop.