Nominal Rate of Assistance (NRA): Data Processing and Treatment

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1. Introduction

Support to agriculture producers is provided in different forms, including border measures, domestic subsidies, and income transfers from taxpayers to producers. International Food Policy Research Institute (IFPRI) maintains a harmonized database on nominal rate of protection (NRP) for the AgIncentives Consortium (www.ag-incentives.org) constituted by OECD (Organization for Economic Co-operation and Development), FAO, IFPRI, the Inter-American Development Bank (IADB), and the World Bank. The database provides measures of the extent of market price distortion of agricultural products caused by border measures, such as tariffs, quotas, trade bans, export taxes, etc. While the NRP has been the focus of this database to date, the Ag-Incentives Consortium has decided recently to also include estimates of the nominal rate of assistance (NRA) in the database. The NRA includes subsidies and income transfers in addition to price support through border measures, thus providing a more complete picture of the extent of producer support to the agricultural sector.

This document describes the different steps of data processing, mapping of payment types to NRA categories, nomenclatures followed etc. Starting with an overall methodology, the document presents data processing steps and procedures followed for each source of data received from IOs.

2. NRA Methodology

The NRA for a country r, year t, and all products ("Total") is defined as:

$$NRA_{"Total",r,t} = \left(\frac{\sum_{s \in S,i} X_{s,i,r,t}}{\sum_i \boldsymbol{ValueProduction_{Ref}}_{i,r,t}} \right) * 100 \qquad (1)$$

where X denotes the associated transfer from consumers or taxpayers to producers and $ValueProduction\_Ref$ is the value of production valued at farmgate reference prices.

Conceptually, the NRA can be disaggregated along two dimensions. First, along the product dimension (horizontal disaggregation), for each product i, the $NRA_{\boldsymbol{i,r,t}}$ can be computed as:

$$NRA_{i,r,t} = \left(\frac{A1_{i,r,t} + \sum_{p \in P,} X_{p,i,r,t}}{ValueProduction_{Ref}{}_{i,r,t}} \right) * 100 = NRP_{i,r,t} + \frac{\sum_{p \in P,} X_{p,i,r,t}}{ValueProduction_{Ref}{}_{\boldsymbol{i,r,t}}} * 100 \qquad (2)$$

Second, along the policy dimension, the NRA can be disaggregated by payments linked to output (i.e., linked to A1 and A2), to inputs (B and C), and to other payments (D, E, F, and G).

An important, non-trivial issue is how to address payments benefiting to a product, but not specific to the product (e.g., fertilizer subsidy benefiting crop producers, and in particular the main crops). At the detailed level of NRA computation, we use value of production as denominator which is measured at reference price.

The database identifies a set of policy instruments that form together the support to agricultural producers:

A1. Market price support
A2. Payments based on output
B. Payments based on input use

C. Payments based on current A/An/R/I1, production required
D. Payments based on non-current A/An/R/I, production required
E. Payments based on non-current A/An/R/I, production not required
F. Payments based on non-commodity criteria
G. Miscellaneous payments.

These categories of support measures follow OECD definitions (OECD, 2016). Below (Table *1*) is a general representation of how we have mapped payment categories to different commodities and NRA indicators. Payment categories for NRA databases are based on OECD payment list.

Table 1: General classification of payment categories and NRA indicators

Payment Categories	Com. 1	Com. 2	Group x	Non-MPS	Unallocated	Total
A1. Market Price Support	NRP_1	NRP_2	N.A.	NRP_{XE}		NRP_T
A2. Payments based on output						NRA_Output
B. Payments based on input use						NRA_Input
C. Payments based on current A/An/R/I, production required						NRA_Others
D. Payments based on non-current A/An/R/I, production required						
E. Payments based on non-current A/An/R/I, production not required						
F. Payments based on non-commodity criteria						
G. Miscellaneous payments						
TOTAL by commodity	NRA_1	NRA_2		NRA_{XE}		NRA

For the sake of simplicity, we only visualize one example of a group of products. Group of products could not be an aggregation of existing columns but could include any set of commodities. Columns Non-MPS and Unallocated is combined in the 'aggregated_NRA' section of the database that will be published. In 'Detailed_NRA', these commodity groups are read in and used separately since they represent different data.

We have NRA categories as below:

i. NRP that includes elements of A1 only.
ii. *NRA_Output* includes the *Payments based on output*. So, it covers elements of A2.
iii. *NRA_Input* includes payments on inputs, and factors of production. It includes elements B.
iv. *NRA_Others* includes payments of type C, D, E, F and G.

For the website data upload, NRA sectoral disaggregation level is Livestock, Crops, and Non-allocated.

[1] The letters stand for Area (A), Animal Numbers (AN), Receipts (R) or Income (I).

If payments data is not available, then NRA information for this country/year is not published. The data point for this year or commodity is also not included in aggregate. Payment types included in NRA stops at Category G. For Excess Feed Cost, no action is taken. Average NRP by sector (livestock and crops) is used for Non-MPS commodities (no breakdown by import/export category is conducted).

3. FAO Data Processing

FAO's Monitoring and Analyzing Food and Agricultural Policies (MAFAP) is the policy support initiative that gathers data for Africa region and Bangladesh in South Asia. MAFAP send two different files – one on payment/subsidy with breakdown by commodity level and other on subsidy at aggregate level. Payment data at commodity level contains payments categories B1, B2, B3, C, and D. Aggregate payment file contains payment data for TOTAL (at aggregate level) with all payment types from A to U. MAFAP suggests that expenditure types R to U are agriculture supportive expenditures and they should not be considered for analysis.

After initial processing of data, we find that data is given for 15 countries. Bangladesh, Nigeria and Zambia are missing in both payment data files for which we have data in NRP. So, we will not publish NRA for these countries. Additional sectors and commodities are in "MPS=No" label in commodity specific subsidy data file. We checked if payment data exists for a commodity (marked as MPS) but not in NRP. This reveals that Burkina Faso-Onions and Ghana-Cassava are such tuples. We changed the label to 'No' in commodity type in Python implying that NRP database was correct.

3.1 Mapping of MAFAP payment categories

Mapping of MAFAP Payment data in file to Payment Categories for NRA is done as follows. Notable is that MAFAP payment files don't have E and G payment categories as well as D. Their currently listed D category is mapped to C.

Table 2: Mapping of payment categories listed in MAFAP

MAPFA payment categories	Mapped to
A. Production subsidies based on outputs	A2
B. Production subsidies based on inputs	B
B1. Variable inputs	B1
B2. Capital (including on-farm irrigation and infrastructure)	B2
B3. On-farm services	B3
C. Income support	F
D. Other payments to producers	C

3.2 Data Processing Steps for MAFAP

We started with commodity payment file and implemented the following:

1. Additional sectors are included in payments data (column Sector_final) such as fishery & forestry. We removed fishery & forestry from NRA calculations.
2. We checked data consistency between commodity payment data and aggregate expenditure TOTAL for B1, B2, B3, C, and D categories to see if the payments by types/categories add up to the total expenditure for corresponding categories by countries.

    a. Tanzania C payments show a gap. To fix this in Tanzania, we took the gap in category C (sum of payments – TOTAL payment) and put it as category A in commodity payment file for MAIZE only. We replaced the values in C for Maize by the values in C in 'Not-specified' commodity and assign 0 to those payments in C in 'Not-specified' commodity. This is to avoid double counting. Finally, we assigned 0 to payment type A coming from aggregate payment file. We allocated the payments in A to 'unallocated'

commodity. This will be only payment A category in commodity file. We will have NRA for Maize and NRA_Total for Tanzania only.

3. Product nomenclature and mapping:
    a. Product names ('Product_final') follow nomenclatures mapped into FAOSTAT products – to both name and number.
    b. FAOSTAT product names (in column 'FAOSTAT_productname') seem to deviate from the nomenclatures that we use in commodity mapping in Ag-Incentives database. For example, beef is mapped to 'Meat of cattle', not 'Meat, cattle', though the FAOSTAT product number (867) is correct. Some FAOSTAT products don't exist in our commodity mapping file such as "essential oils, nes". This type of data will go to 'Unallocated' or 'Non-MPS' as a general rule.
    c. Mushroom is mapped to 'Crops' from 'Forestry' in Python.
4. We created a new product nomenclature to map commodity that are labeled as 'not specified' in the column 'Product_final'. These are 'NonMPS-othercrops', 'NonMPS-other livestock', 'Non-allocated agriculture', 'Non-allocated crops', 'Non-allocated livestock'
    a. 'not specified' with 'Sector_final' as agriculture is mapped to 'Non-allocated agriculture'
    b. 'not specified' with 'Sector_final' as crops is mapped to 'Non-allocated crops'
    c. 'not specified' with 'Sector_final' as livestock is mapped to 'Non-allocated livestock'
    d. 'not specified' with 'Sector_final' as crops and 'Groupofproducts_final' is a commodity name is mapped to 'NonMPS-otherCrops
    e. 'not specified' with 'Sector_final' as livestock and 'Groupofproducts_final' is a commodity name is mapped to 'NonMPS-otherLivestock'

Extracting payment data from aggregate payment data file is done in the following steps:

1. We read in data in: LCU, nominal | Actual | Total.
2. We read MAFAP aggregate payment data for category A for TOTAL. We map these payments to "Unallocated" in Table 1 for methodology. Here, payment type A in MAFAP is mapped to A2.
3. We checked missing payments in TOTAL payment file.
    a. For Ghana (2016, B2) data exist in commodity breakdown file but no data found in total payment file. This data was set to ZERO in Python.

4. IDB Data Processing

We received data from IDB on 26 October 2022 (Agrimonitor PSE Database.xlsx) and processed them in Python. Labels in IDB database and mapping to OECD Categories (IDB uses same methodology as OECD) is presented in the following table.

Table 3: Mapping of payment categories listed in IDB

IDB payment categories	Mapped to
Payments based on output (PO)	A2
Payments based on input use (PI)	B
Payments based on current A/AN/R/I, production required (PC)	C
Payments based on current A/AN/R/I, production required, single commodity (PC)	C
Payments based on non-current A/AN/R/I, production required (PHR)	D
Payments based on non-current A/AN/R/I, production not required (PHNR)	E
Payments based on non-commodity criteria	F
Miscellaneous Payments (PM)	G

IDB data is organized by different categories and according to the IO such organization of data is mainly to serve different purposes, e.g., publishing in website etc. These include category 1 (C1), category 2 (C2) and category 3 (C3). Therefore, we had to read in and used C2 data for NRP. Payments relevant to NRA are found in C1 and C3 Category 1 is defined for "Group or not commodities". C2 and C3 are for "commodities". As IDB suggested, we read in C3 for NRA computations. IDB sent a sample data table for Peru (see appendix B) in order to guide us how we should read IDB data that is consistent with the above mapping (Table *3*).

From our initial data check on IDB data file we observe the following:

- Suriname has negative payments based on output for rice. We dropped them.
- New commodity: quinoa (in Bolivia)
- IDB suggested to drop honey (in Guatemala) data from 2012-2017.

4.1 Data Processing Steps for IDB

In IDB methodology, Non-MPS means that transfers are provided to the specific commodities, but those commodities are not in the list of commodities chosen for MPS calculations.

- As per IDB's description: Unallocated = TOTAL - ALL COVERED
- "Group or not commodities" is a very broad label that includes: "All commodities/unspecified group of commodities/commodity label not applicable (i.e. GDP)".
- "Group or not commodities" in C1 = Sum of all MPS commodities + Non-MPS commodities (XE) + unallocated transfers/all commodities (AC)/group of commodities (GC).

Thus, we checked if "GAP = TOTAL - Covered Commodities" is negative or not.

Payment data by categories and specific data instances

Data variable names are the same as OECD, but some Category inconsistencies in published data exist. Below is a description, organized by payment type, of how we addressed and implemented in data processing (in Python).

A2. "Payments based on output"
"Payments based on output" for commodities are in C2, C3, or in Both. Payments based on output (PO) have the patterns below.

Table 4: Use of 'category' column in IDB source database

Data	Category 2	Category 3	Final use
Data having zeros	Yes	Yes	Discarded
Data non null and not zero	Yes	Yes	Found equal. Used Category 3
Data exist	Yes	No	It means error. We used Category 2
Data exist	No	Yes	No issue. Category 3 was read

Further procedures and checks were made to ensure consistency in data:

- If there are instances where "Payments based on output" are ZERO/NULL in C2 and in C3, we checked if MPS equals/does not equal "Support based on Commodity Outputs". If both are missing, MPS should equal "Support based on Commodity Outputs".
- "Payments based on output" should be in C3 if allocated to commodities and aggregated in Category 1. Category 1 is sum of commodity-specific (in C1), group commodities, all commodities and NON-MPS commodities.

B. "Payments based on non-current A/AN/R/I, production not required"
"Payments based on non-current A/AN/R/I, production not required" line item applies only to "Group or not commodities" (in category 1 only) for all countries. So, these are not linked to any individual commodity payments. In terms of Table 1, they go to TOTAL column.

C. "Payments based on non-current A/AN/R/I, production required"
In category 1, the only commodity is "Group or not commodities". However, there is data in some countries in C1, while no data in C3) for same variable. These are Panama, Trinidad & Tobago. In general, for IDB database, data in Category 1, while no data in Category 3 means that the payments are not specific to any of the MPS commodities.

- For Panama, payments for Group commodities of "Grain" are mapped to "Crops" Sector.
- Trinidad & Tobago: IDB checked and data is a typo, it should be in PHNR. This was reallocated to correct payment type. This went to TOTAL column since it is "Group or not commodities". There was already data for Trinidad & Tobago in this category for 2015. IDB told us to add PHR and PHNR and map the sum to PHNR.

D. "Payments based on current A/AN/R/I, production required"
This line item is found to exist in "Group or not Commodities" and in category 1 only.

There is data in C3 too for "Payments based on current A/AN/R/I, production required, single commodity". So we considered "Payments based on current A/AN/R/I, production required" for category 1 (total in this case) and "Payments based on current A/AN/R/I, production required, single commodity" for C3 (sub-category for commodity-specific payments) as same payment type. We combined these in Python.

E. “Payments based on current A/AN/R/I, production required, single commodity”
Data exist for this payment type in Category 3. If there are instances where there is data in “Payments based on current A/AN/R/I, production required” at group level and no data in Single Commodity level, it is ok to assume there are no commodity-specific payments (or data not read from country Excels).

We noticed sum of commodities across “Payments based on current A/AN/R/I, production required, single commodity” gives “Payments based on current A/AN/R/I, production required (for Group or not Commodities)”, only for Barbados and Suriname.

For other countries such as Bahamas, Ecuador, Peru, Trinidad and Tobago, Uruguay, there is no data in the line item of “Payments based on current A/AN/R/I, production required, single commodity”. We allocate these to TOTAL column.

Finally, we have implemented the following based on our data assessment and consistency check:

- There were 171 cases where payments exist in “Group or not commodities” but no payment exists in commodities. In this case, we assigned payment data to 'Unallocated'. GROUP=TOTAL => Unallocated
- We also had data where sum of payments by payment type over commodities do not add up to the TOTAL. So, we assign the remainder [TOTAL (C1)-Sum of payments over commodities] to 'Unallocated'.

5. OECD Data Processing

As noted in the technical note on NRA, OECD PSE files are considered benchmark for payment data gathering and compiling into one database. In the PSE files we get the payment types - A2, B, C, D, E, F and G, and market price support (A1) and they are all read from 'TOTAL' sheet. It should be noted that each PSE file contains four types of sheets – TOTAL, SCT GCT, x_SCT and x_MPS. TOTAL sheet contains all types of payments/subsidies and market price support, for single (SCT) and group commodities (GCT), etc. as well as for 'all' or 'unallocated' (e.g. ACT, OTP) type commodity. We have chosen to use 'TOTAL' sheet as it is found that the data for OTP, SCT, GCT, ACT in TOTAL add up to those found in other sheets. See Checks below:

- (combined payments) (B+C+D) in 'TOTAL' sheet=> (BCD) in 'SCT GCT' sheet labeled GCT
- (combined payments) (E+F+G) in 'TOTAL' sheet => (EFG) in 'SCT GCT' sheet labeled OTP

Payment types mapped to group and 'unallocated' commodity

- OTP => is mapped to AC (All Commodities). This will go to "Unallocated" category.
- All AC commodities are mapped to "Unallocated".
- GCT = Group commodities: GCT sheets contain payments made to GCT, ACT (AC), and OTP (AC) commodities.

We noticed 52 observations in OECD have negative payment data and they are spread across payment types. Our review indicates that negative values exist in both sheets - TOTAL and SCT. Out of 52 observations, 27 are MPS commodities, 1 NON-MPS commodity, and 24 GCT and AC types. We kept the negative payments at the beginning.

We read in payment types B1, B2 and B3 alongside B in the payment data. We noticed that for Argentina, for all commodities except XE (Non-MPS), B1, B2 and B3 values are exactly same over the years. We checked both TOTAL and SCT sheet and they reveal the same. We also conducted internal validation of whether B1, B2 and B3 adds up to B. In OECD, they add up.

GCT commodities and harmonization of codes

List of aggregated commodities and commodity codes overlap. We have prepared a list of countries that use the same commodity label. Example: GCT10 is used for a total of18 different commodity label. We prepared a mapping table for GCT type payments, whose definition changes for each country. This will help us understand coverage of each sector and was used in R Code for processing of consolidated database.

GCT code up to 9 has the same commodity label. However, GCT codes from 10 onwards had different labels for different countries. We have 46 such combinations for GCT10 to GCT15. Therefore, we decided to tag country ISO3 code after the original GCT code. For example, for GCT10 in Australia, we have coded it as 'GCT10AUS'. In this way we have 1 to 1 mapping for each GCT code and label.

There are new GCT commodities added this year, and they are 'maize, beans and rice', 'rice, maize and soybeans', 'soybeans and rapeseed'.

6. Commodity Codes and Harmonization

Payment database file produces a total of 186 commodities, of which 89 has exact match with commodities already exist in the COMMODITY.csv file. Therefore, we need to add 97 commodities in the file and assign appropriate commodity code (AGCOMCODE) with commodity name.

While maintaining 1-1 mapping between AGCOMCODE to OECD_CODE, IADB_CODE and MAFAP_CODE, n-1 mapping for AGCOMCODE to AGPROCODE and 1-1 for FAOCODE to AGCOMCODE, we want to simplify commodity labels and coding to the extent possible. We deal with two related tasks here: simplify and extract unique commodity label and commodity code under AGCOMCODE and AGCOMNAME.

6.1 Commodity relabeling and corresponding modification in Python code

Commodities from payment file can be broadly grouped into synonymous and asynonymous or asynchronous types. The following are the commodities that we merge into based on the description of each commodity.

Beef and milk

For example, beef and milk, milk and beef, DY-BF are all same products but appeared with different labeling and codes. So, they can be relabeled as 'beef and milk'. We have decided to assign OECD_CODE for this as GCTBFMK.

Vegetables

Similarly, Vegetables appeared twice – in Israel and Russia – with two different GCT codes (GCT12 and GCT10). We decided to assign GCTVEG as OECD_CODE.

Grains and oilseeds

And finally, Grains and oilseeds, appeared twice – in Switzerland and Ukraine – with two different GCT codes (GCT10 and GCT11). We decided to assign GCTGNOS as OECD_CODE.

'Unallocated' vs 'Non-allocated agriculture'

We have 'Unallocated' commodities across IOs. However, we also initially labeled a commodity as 'Non-allocated agriculture' coming from MAFAP. After discussing the merit of having these two labels that are apparently synonymous, we decided to merge 'Non-allocated agriculture' with 'Unallocated'.

'Beef and sheep' vs 'Beef and veal sheep'

'Beef and veal sheep' are the same as 'beef and sheep'. So decided to relabel 'beef and sheep' as 'beef and sheep meat' and merge 'Beef and veal sheep' with 'beef and sheep meat'. OECD_CODE would be GCTBFSH.

For all these synonymous products, we label and modify commodity codes in source or input file (in python). For example, all beef and milk including DY-BF must have one commodity label and commodity code in OECD input file. Same is true for vegetables, grains, and oil seeds commodities. And in MAFAP, 'Non-allocated agriculture to be labeled as 'Unallocated'.

Other crops – GCT5

Here definition that is "country specific" as since the other crops could only be understood at the country level as, "all the crops - detailed crops". So, we decided to keep specificity of this commodity in commodity

mapping and assign GCT5ISO (with each country ISO code). A total of 27 countries has this commodity code and so I have assigned commodity code as GCT5ISO for each.

In order to keep 1-1 structure between AGCOMCODE/AGCOMNAME and OECD_OCDE/OECD, I have relabeled this commodity as 'Other crops – Country Name', similar to China – Fruits and Vegetables Imported. Relabel this commodity as 'Other crops – Country Name' with code as GCT5ISO.

'Fruit excluding citrus', 'Oranges and grapefruit'
Above commodities appeared in Israel and it seems that Fruits = Fruits excluding citrus + Oranges and grapefruit. We decided to relabel it as 'All fruits – (Oranges & Grapefruit)'. OECD_CODE will remain as GCT10ISR.

6.2 Introduction of new label and code in AGGRPNAME and AGGRPCODE

In certain group transfers we find a set of broad commodities that are difficult to classify into Grains or Horticulture. 'All crops' or 'All arable crops' or 'Other crops – ISO3' are such commodities and therefore we have decided to introduce 'Crops' under AGGRPNAME column and 'CRP' under AGGRPCODE column.

6.3 Assigning AGCOMCODE for AGCOMNAME

The idea is to have a unique code for each commodity. We have decided to assign 6-digit code systematically so that we can distinguish crops from livestock and maintain hierarchy in the commodity tree. The first digit of the code is either 1, 2 or 3. Here 1 is assigned for crops, 2 for livestock and 3 for non-MPS commodity.

- At the top, we have 'agriculture' where payment is unallocated to any specific commodity or groups of commodities. 399999 was assigned to the 'Unallocated' commodity.
- In the second tier, we have 'crops' and 'livestock'. The codes starting with 11 and 22 go to crops and livestock group respectively.
- Under crops, three commodities exist – allocated, non-allocated, and non-MPS.
- All allocated crops have been assigned codes with 111, non-allocated crops with 112 (only one) and non-MPS crops (only one) with 113 in the first three digits.
- Under crops, we have grains (starting with 1111), fruits & vegetables (starting with 1112), oilseeds (1113), other crops (1114).
- Similarly, in livestock, we get allocated, non-allocated, non-MPS commodities or products.
- Allocates starts with 221, non-allocated with 222 (only one) and non-MPS (only one) with 224 in the first three digits.
- In allocated livestock we have two groups – ruminants (2211) and non-ruminants (2212). The products under these two groups have been assigned respectively starting with 2211 and 2212.

Break in commodity code structure
Product(s) that has combination of both crops and livestock, such as 'All except milk and meat' or 'All-SM', has breaks in the code structure. 'All-SM' is relabeled as 'All supply managed commodities'. These commodities seem to be at high level in commodity tree, something like at 'agriculture'. I have assigned 225000 and 226000 respectively for these two commodities.

6.4 Commodity labels that are ambiguous and need precise definition and relabeling

In OECD database we get to see a set of commodities, mostly GCT type that have ambiguous definition in the PSE files and therefore we had to review cookbooks of respective countries. Below is the table of these commodities and decision regarding relabeling and mapping to appropriate columns, the master file for commodity mapping under Ag-Incentives works.

Table 5: Relabeling and mapping of some GCT commodities found in OECD database

<table>
<tr><th>Commodity</th><th>Description found in cookbook</th></tr>
<tr><td>All crops except wine</td><td>Payments for crop production on steep slopes
From 1986: payment per hectare of land on slopes with a gradient of more than 18% cultivated in a way to maintain soil productivity and not to be harmful to the environment. Payment rates differ with the slope gradient, and payments are limited to farms bigger than 0.5 hectare. Calculated on a fiscal year basis.

<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>111002</td><td>All crops except wine</td></tr></table></td></tr>
<tr><td>All crops, cattle, and sheep</td><td>This is a group commodity transfer and includes all crops, cattle and sheep.
Payments for Ecological Compensation and Extensive Meadows (1992)

<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>111003</td><td>All crops, cattle and sheep</td></tr></table></td></tr>
<tr><td>Leguminous crops</td><td>Area payments for leguminous crops. Oilseeds + Legumes

<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>111004</td><td>Leguminous crops</td></tr></table></td></tr>
<tr><td>Protein crops</td><td>This includes payments per hectare of protein crops, with a rate per ha for any protein crops different from that for cereals or oilseeds.

<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>111005</td><td>Protein crops</td></tr></table></td></tr>
<tr><td>Cereals, Oilseeds and Protein crops</td><td>COP, originally coded, refers to Cereals, Oilseeds and Protein crops. This includes any policy that is available to producers of any COP crop, such as set-aside payments and Agenda 2000 area payments after 2003. Set aside payments, payments for energy crops, payments for all crops

<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>111006</td><td>Cereals, Oilseeds and Protein crops</td></tr></table></td></tr>
<tr><td>Alternative crops</td><td>No definition found.

<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr></table></td></tr>
</table>

<table>
<tr><td></td><td><table><tr><td>111007</td><td>Alternative crops</td></tr></table></td></tr>
<tr><td>Non-insured crops</td><td>It includes payments under the Non-insured Crop disaster Assistance Program
<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>111008</td><td>Non-insured crops</td></tr></table></td></tr>
<tr><td>All-SM</td><td>Payments are included in All commodities but supply managed group transfers. Crops+livestock
<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>226000</td><td>All supply managed commodities</td></tr></table></td></tr>
<tr><td>Biomass</td><td>It includes payments under the Biomass crop assistance program.
<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>111009</td><td>Biomass</td></tr></table></td></tr>
<tr><td>Fruits flowers, industrial crops</td><td>Per hectare payments to assist growers to purchase plants of fruits, flowers, and industrial crops to take advantage of agroclimatic conditions in Michoacán. Calculated on a fiscal year basis.
<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>111250</td><td>Fruits flowers, industrial crops</td></tr></table></td></tr>
<tr><td>All except milk and meat</td><td>Input subsidy based on VAT accumulation. Subsidy could only be used for purchases of agricultural inputs, such as fuel, seeds, fertilizers, pesticides, and agricultural machinery and equipment; milk and meat producers were not eligible for this regime as they were eligible to support based on “redirection of processors’ VAT”.
<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>225000</td><td>All except milk and meat</td></tr></table></td></tr>
<tr><td>Feed crops</td><td>This GCT item found in Kazakhstan data and no detail list of crops is provided in the PSE file. There is another GCT item, named ‘Feed’ found in Norway PSE file. Payments included all subsidies to coarse feed, including acreage support to mountain farming, and support to meadow seed storage. We decided to merge them into ‘Feed crops’.
<table><tr><td>AGCOMCODE</td><td>AGCOMNAME</td></tr><tr><td>111010</td><td>Feed crops</td></tr></table></td></tr>
</table>

6.5 Selected commodities appearing in MAFAP database and their relabeling and mapping

‘Sheep meat and wool’ vs ‘Sheep’

While ‘Sheep meat and wool’ appears in Island, ‘Sheep’ comes from MAFAP with commodity code 976. For Island, we get value of production data for both sheep meat and wool in FAOSTAT. On the other hand, it may be found that the countries where the commodity ‘Sheep’ appears may not have ‘wool’

industry separately and as such will contain VoP data, we decided relabel ‘Sheep’ as ‘Sheep meat’. This will go to product code 977, instead of 976.

This payment data appears for Ethiopia, Ghana, Malawi, and Rwanda. However, Ethiopia payment is showing zero for Sheep. My suggestion is to replace Sheep with Sheep meat.

‘Chickens’ vs ‘Chicken meat’
This was discussed at length and issue is about payments go to chicken for meat production or chicken for eggs. Since we get VoP for both products and it is not clear from MAFAP whether chickens mean only as animal or chicken meat, we don’t know which farmer types receive money. In the case of NRP, the price support is more product specific but in payment this may not be the case in countries.

‘Goats’
In FAOSTAT we only have VoP for goat meat and so we may want to relabel this as ‘Goat meat’ with commodity code as 1017 (instead of 1016). This will then be in the rows against goat meat.

‘Pigs’
In FAOSTAT we only have VoP for pig meat and so we may want to relabel this as ‘Pig meat’ with commodity code as 1035 (instead of 1034). This will then be in the rows against pig meat.

7. Computing Value of Production (VoP)

As NRA is defined as ration of support over value of production at reference price, both measured in current US Dollar, we need to have data on value of production for each commodity and commodity groups or aggregates. Two main sources have been used to gather the value of production – one from existing NRP database which contains VoP at reference price, and other from FAOSTAT that gives us VoP data at producer price level. VoP from FAOSTAT has been appropriately aligned with the corresponding VoP at aggregate level exist in the NRP database. The detailed process of compiling this value of production is described in a separate technical note.

Appendix A
Sample data table for Panama in 2014

	Com. 1	Com. 2								Com. 3	Non-MPS	Group x	Unallocated	Total
	Beef and Veal	**Eggs**	**Maize**	**Milk**	**Pigmeat**	**Pineapples**	**Plantains**	**Poultry Meat**	**Refined Sugar**	**Rice**				
A1. Market Price Support	56.26	26.13	32.40	2.19	52.30	26.68	18.32	4.58	(117.93)	21.77	34.75	na	na	NRP_T
A2. Payments based on output	-	-	-	-	-	-	-	-	-	-	-	-	-	*
B. Payments based on input use	1.00	-	-	-	-	-	-	-	-	-	-	-	26.09	NRA_ Input
C. Payments based on current A/An/R/I, production required	-	-	-	-	-	-	-	-	-	-	-	-	-	
D. Payments based on non-current A/An/R/I, production required	-	-	-	-	-	-	-	-	-	-	-	3.53	-	NRA_ Others
E. Payments based on non-current A/An/R/I, production not required	na	na	na	na	na	na	na	na	na	na	na	na	-	

F. Payments based on non-commodity criteria	na	na	na	na	na	na	na	na	na	na	na	na	-
G. Miscellaneous payments	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL by commodity	57.25	26.13	32.40	2.19	52.30	26.68	18.32	4.58	(117.92)	21.77	34.75	3.53	26.09
PSCT	*57.25*	*26.13*	*32.40*	*2.19*	*52.30*	*26.68*	*18.32*	*4.58*	*(117.93)*	*21.77*			
Check: *sum of total by commodity = PSE*		*188.05*											
Check: *TOTAL by commodity for single commodities = PSCT*	*TRUE*	*TRUE*	*TRUE*	*TRUE*	*TRUE*	*TRUE*	*TRUE*	*TRUE*	*TRUE*	*TRUE*			

Funding for this work was initially provided by CGIAR project on Policies, Institutions and Markets (PIM). Current funding is provided by the OneCGIAR initiative on Rethinking Markets. This publication has been prepared as an output of the Assessing Agricultural Emissions project and has not been independently peer reviewed. Any opinions expressed here belong to the author(s) and are not necessarily representative of or endorsed by IFPRI.

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