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AI-generated content may be incorrect.Introducing the Updated AgIncentives Database

AgIncentives project note 1

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# Abstract

Prior to the 1980s, information on agricultural incentives provided by governments was extremely limited and difficult to access. Much debate took place without agreed measures of policy settings. During the 1980s, the OECD began to collect detailed information on agricultural incentives in member countries, but data remained fragmentary for developing countries. The only close-to-global information on agricultural distortions was provided by a one-off study undertaken by Kym Anderson at the World Bank, completed in 2009. The objective of this initiative is to bring together information on agricultural incentives from AgIncentives Consortium, comprised of five key institutions: Food and Agriculture Organization (FAO); the Inter-American Development Bank (IDB); International Food Policy Research Institute (IFPRI); the Organization for Economic Co-operation and Development (OECD), and the World Bank. The resulting data are presented in a consistent format at <http://www.agincentives.org>. The databases accompanied with this note is product of the AgIncentives Consortium. This paper discusses the methods used and the coverage of this database, and its potential value to economic modelers.

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## 1. Introduction

Prior to the 1980s, the available evidence on the changes in incentives provided by governments to farmers was extremely poor. While Josling (FAO 1973) had provided a widely agreed methodology for measuring these changes, few studies were undertaken and those that were undertaken were frequently of limited commodity coverage and duration. Debates about assistance were therefore based on limited information, with participants frequently choosing arguments based on their own preferred sets of alternative facts.

This changed during the 1980s, when the OECD began to monitor the producer support provided by governments in OECD countries. The famous Krueger, Schiff and Valdes (1988) studies of agricultural distortions in developing countries provided detailed information for 18 such countries. These two sets of studies yielded two key stylized facts—that agriculture in developed countries was typically highly protected, while it was generally taxed—and frequently highly taxed—in developing countries.

During the early 2000s, the large set of studies coordinated by Kym Anderson provided information on approximately 80 countries (including estimates based on the OECD monitoring) and updated our assessment of developments. The estimates for OECD countries showed a clear downward trend from their peak levels around 1986-88, while protection rates were trending up strongly in developing countries.

It has become clear that—rather than relying on intermittently-produced one-off studies of agricultural protection—there is a need for continuously-updated estimates. Fortunately, the key elements of such a database can be assembled based on work that is ongoing in a number of key international organizations—the FAO; the Inter-American Development Bank; the OECD; the World Bank. IFPRI is providing the framework in which these data will be presented in a common format at <http://www.agincentives.org>. By working together, these organizations will be able to provide useful, continuously-updated and relatively comprehensive information to users at relatively low cost.

Because of differences in databases, methodologies, and time spans, it has been relatively difficult for analysts to obtain consistent long-term measurements of agricultural distortions across all developed and developing countries. This made it difficult for policy makers to correctly measure, compare, and interpret the impact of their policy designs across commodities, countries, and time spans. To improve on this situation, an Agricultural (Ag) Incentives Consortium including the major international organizations (IO) active in measurement of agricultural incentives--OECD, FAO, IDB, IFPRI, and the World Bank was formed. The AgIncentives Consortium focuses on organizing collaboration among IOs in order to provide better estimates of agricultural incentives, and to contribute to better policies. One pillar of this coordination involves generating a common set of clearly defined and well-documented common indicators, with a focus on price incentives. A second pillar is about expanding country and product coverage. A third pillar is providing a platform for tackling new issues and improving methodologies.

A key element of the 2024 revamp of the database has been the inclusion of Nominal Rate of Assistance (NRA) measures. These include not just the support provided by trade measures, but support provided by subsidies paid on outputs, inputs, and on other criteria. These subsidies are particularly relevant to current debates on repurposing agricultural support because their impacts on economic, environmental, and social outcomes are strongly influenced by the design of agricultural support programs.

In this paper, we first present a summary of the efforts in the literature to measure distortions and the relevant methodological discussions. Next, we present a synopsis of the Consortium and its goals, as well as data processing conducted for the databases of members of the Consortium. Then, we highlight key features of the Nominal Rate of Assistance measures now provided in the database. We, then, present and discuss the behavior of the NRPs over time. The final section concludes.

## 2. Methodologies in the literature

One broad approach to measurement of trade distortions focuses on the measures actually used to provide protection (or taxation). Databases such as UNCTAD TRAINS database consolidate measures of tariffs and nontariff measures, including taking the tariff equivalents of specific, mixed, and compound tariffs. The WTO provides measures of both applied tariff rates and the schedules of commitments (bound tariffs) made by countries in WTO negotiations. The WITS software provides easy access to these databases ([www.wits.worldbank.org](http://www.wits.worldbank.org)).

While tariff-based measures are relatively easy to interpret and analyse, much agricultural protection and/or taxation is implemented using nontariff barriers such as tariff-rate-quotas, licenses, bans and sanitary and phytosanitary measures. For these, it is important to have measures of frequency and coverage, such as are provided by the UNCTAD TRAINS database ([www.unctad.org](http://www.unctad.org)). Unfortunately converting this information into measures of the extent to which trade is distorted, or producers are supported, is not straightforward. Simply knowing that imports of a particular good are limited to 10,000 tons tells us nothing about the trade restrictive impact of a quota unless we know what imports would have been in the absence of the quota. The usual approach taken to dealing with this problem is to estimate the *ad valorem* tariff that would, under specified conditions, have the same effect on trade as the tariff.

Given the wide variety of policy instruments used to influence agricultural prices and outputs, the primary method for estimating the tariff equivalents of agricultural trade barriers is comparison of internal and external prices at a common reference point. If an import quota, for instance, reduces the availability of the good in the domestic market enough to increase its price by 20 percent relative to the external price, then that quota is viewed as being equivalent in its effect to a 20 percent *ad valorem* tariff.

This approach was used by Krueger, Schiff and Valdes (1988) to estimate the tariff equivalents of the range of policy interventions that changed the domestic prices for agricultural goods relative to their external prices in a range of developing countries. This effect was measured as the proportional difference of the Producer Price (PP) relative to border prices adjusted for distribution, storage, transport, and other marketing costs (the Reference Price, RP). This measure is essentially a tariff-equivalent, *t*, of the measures used to influence domestic prices. The NRP is measured as:

(1) *NRPi =* ((*PPi / RPi*) *–* 1)

Anderson et al. (2008) expanded this effort by measuring, in addition, the Nominal Rate of Assistance to agriculture, NRA, which includes policy measures other than trade barriers that affect the incentives for agricultural production in a country. They also outlined many of the methodological issues involved in deriving such numbers. Different components of NRA were identified and defined, such as the NRA to farm output conferred by border price support, the NRA to output conferred by domestic price support, and the NRA to inputs, among others. Furthermore, there is clearer identification of non-distortionary price wedges such as transportation and processing costs relative to distortionary price wedges introduced by policy, which help in location and evaluation of prices being transmitted along the value chain.

For direct measurement of policies, OECD has a major effort with, the Producer Support Estimate, PSE (OECD 2022). For OECD, the PSE is a part of the Total Support Estimate, which is an indicator of the annual monetary value of all gross transfers from taxpayers and consumers arising from policy measures that support agriculture, net of the associated budgetary receipts. Here, the percentage PSE represents policy transfers to agricultural producers, measured at the farm gate and expressed as a share of gross farm receipts, including support.

The PSE and the NRP are fundamentally different and comparing them directly is a common—and frequently major—source of error. Fortunately, there is a simple mapping between the NRP and the PSE that is frequently useful in comparing them. If, for simplicity, we consider the quantity of a good that costs $1 at the border, then an NRP of *t* means that good has a domestic value of (1+*t*). The PSE for this good is

(2)

This formula has the useful feature of showing that the PSE must always lie between 0 and 1 for a positive rate of protection. The NRP, by contrast, can take any value between -100 percent and positive infinity. Rearranging equation (2) also allows us to move in the opposite direction to derive the NRP given the knowledge of the PSE:

(3) *t =*

OECD also reports a Nominal Protection Coefficient (NPC) that includes budgetary outlays and treats input markets differently. It is the Producer Price plus the value per unit of payments based on output relative to the Reference Price—payments that can be allocated to individual commodities.

(4)  *NPC =* (*PP +* (*payments based on output or production quantity*) / *RP*)

Transfers counted in the PSE include market price support, budgetary payments, and revenue foregone by the government. The PSE has evolved from being just a measure of market price support to including many payments, including input subsidies—such as fertilizer subsidies—that cannot necessarily be identified with particular outputs. The Market Price Support (MPS) for a commodity is estimated either by adding together transfers to producers from consumers and taxpayers or by multiplying the quantity of production by the market price differential (the difference between farm and border price). The MPS component of PSE is similar to the NRP in that it also depends on price gaps.

FAO (MAFAP 2016) and IDB-Agrimonitor (2016) use the methodologies developed by OECD. All the measurement efforts undertaken by Consortium members include measures of Nominal Rates of Assistance (NRA) provided by non-border measures such as subsidies to output and inputs. Support provided by subsidies can readily be expressed in monetary terms. When subsidies are expressed relative to the value of output, they are included in a Single Commodity Transfer (SCT) that can be attributed to that commodity (OECD 2016, p117). Converting these measures to an NRA as a percentage of the value of output at world prices requires subtraction of the value of the SCT from the gross value of output in the denominator of the SCT—an operation analogous to that undertaken for the PSE in equation (3).

**3. Consortium structure and** **database**

The objectives of AgIncentives Consortium are to bring together the findings from the organizations active in this field on a continuing basis in order to develop a global view of incentives, and to shine a light on incentives in some of the smaller economies where distortions to agricultural incentives have a particular impact on the poor. The AgIncentives Consortium achieves these objectives through creation of a community of practice, and harmonization and consolidation of a database.

The initial focus of the Consortium was on price distortions. In the first phase of the Consortium, we provided only Nominal Rate of Protection (NRP), based on Krueger, Schiff, and Valdes (1988). As noted above, the NRP is based on the ratio of the price gap and the observed reference price measured at the same point in the value chain. We now provide measures of three types of budget support—to outputs, inputs and factors—and a composite measure, the NRA, including both market price support and total budget support. We first consider the NRP measures and then the NRA measures.

**Nominal Rate of Protection (NRP)**

As can be seen from Table 1, the IOs publish measurements of distortions with some overlap across geographical and sectoral coverage and time span. In particular, the FAO and IADB add coverage of a number of countries in Africa and in the Americas where own-country incentives have important implications for poor people. The goals of the Consortium, therefore, include maintaining the mandate and the independency of each IO, and creating a collaborative approach for database, with a clear recognition of the intellectual property rights of each partner.

Table : Country and commodity coverage by IOs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **International Organization** | **Economic Clusters Covered** | **Number of economies** | **Time Period** | **Total Commodities** |
| OECD | OECD + Emerging | 28\* | 1986-2023 | 67 individual, Market Price Support (MPS), Total Support |
| FAO | Selected African countries and Bangladesh from South Asia | 23 | 2005-2023 | 41 individual |
| IDB-AGRIMONITOR | Latin America and Caribbean | 19 | 2004-2023 | 42 individual, TOTAL |
| World Bank | South Asia | 2 | 2004-2014 | 14 individual |

Note: Not all countries report all data for all commodities listed and all years. \* Including the EU27 as one.

Source: AgIncentives database

We use the method for Direct NRP from Krueger, Schiff, Valdes (1988) to create a consolidated NRP with the underlying price metadata from IOs. We also compute average NRPs for the agricultural sector of individual countries, NRP.i, a global NRP for commodities, NRPc. and an overall global NRP..

(5) *NRP.i =* ( ( *Σc*(*PPci\*Qci*)/ *Σc* (*RPci \*Qci*) ) *–* 1)

Where Qci is the quantity of production for commodity c in country i ; c=1….n is an index over commodities and i=1…..m an index over countries.. The average NRP for a commodity worldwide is given by:

(6)*NRPc. =*  ( *Σi*(*PPci\*Qci)/ Σi (RPci \*Qci) – 1*

where summation over index i refers to production of the commodity in all covered different countries.

Because of the wide variety of policy instruments used to influence agricultural incentives —ad valorem tariffs, specific tariffs, quotas, licenses, tariff-rate-quotas, etc.—it is not feasible to evaluate agricultural protection using measures such as a tariff rate. We, therefore, use measures of distortions based on the price comparison approach, which captures the complete impact of whatever distortions are applied. It does this based on the law of one price, where the goods must be comparable (in terms of quality, processing level, and location). The reference price is the border price evaluated at the official nominal exchange rateadjusted for transport, storage, distribution, processing, and for quality differences based on input data provided by each IO.

The first step before computing NRPs, is creation of a harmonized metadata template that incorporates input data for all Ios involved and deals with and computes NRPs for commodities and countries as described in Figure 1.

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Figure : Harmonized data template process

Note: NRPs at sectoral level (crops, livestock) are computed following equation (5) for the relevant sets of commodities.

Measurements of the NRP follow the harmonized metadata template in Figure 2 to identify the path of price transmission across the Value Chain and to measure changes in prices along this path while computing the reference price at the same point in the value chain. This reference price is later compared to the farmgate price (PP) to compute the NRP.

Figure : Price Transmission along a Value Chain

The analysts preparing the data apply both quantity and quality adjustment to allow comparison of prices for homogenous products. As explained in the OECD (2016) manual, quantity adjustment is frequently needed to obtain prices that can be compared. As an example, consider beef, for which the border price is frequently quoted based on the price of boneless, boxed beef. By contrast, domestic prices are frequently reported using the sale price of live cattle. Comparing the price of live cattle with that the traded product requires a conversion factor of around 0.4. Other adjustments may be needed for quality differences in terms of color, moisture level, protein, fat or oil content, or degree of impurities.

The objective of the analysis is to obtain a market price differential (MPD)that reflects only the impacts of trade policy. If the domestic price data are at the farm gate level, then a transport cost adjustment will be needed before the farm gate price can be compared with reference price at the border.

There are inevitably some commodities that are too minor or too heterogenous to allow computation of the NRP. Setting the NRP for these commodities to zero but keeping their value of output in the denominator of equations (5) and (6) almost certainly understates the overall nominal rate of protection at a global level. We follow the OECD practice of assuming that the NRP is the same for these commodities as for the ones on which we have NRP measures. This allows us to calculate NRP measures for agriculture as a whole. 1

**NRA Indicators**

The Consortium now provides Nominal Rate of Assistance (NRA) estimates for commodities and sectors. These are a set of measures that capture the extent of support provided by a range of policy instruments. These include the market price distortions caused by border measures— such as tariffs, quotas, trade bans or export taxes—reported in NRP measures; and changes in incentives created by subsidies linked to production, to inputs, or to other characteristics such as current or historical land use. The set of NRA measures provides a more comprehensive picture of the extent of producer support to the agricultural sector, relative to Nominal Rate of Protection (NRP) measures that capture only the extent to which agricultural policies affect the domestic market price of a product relative to external prices.

The total percentage NRA for country r, in year t, covering all products and policy measures is defined as:

(7)

where *X* is the transfers made with policy instrument *s* from consumers or taxpayers to producers and is the value of production valued at external reference prices for commodity *i*, in country *r*, and year *t.* The classification by policy instrument follows that used in the OECD’s PSE manual, with support from border measures (A1 in Table 2) distinguished from subsidies on output (A2), subsidies on inputs (B) and “other” subsidies (C to G).

In Table 2, we summarize various components of the NRA, with the types of policy interventions represented by rows and the commodities by columns. In this table, we present the full OECD classification of support along the rows. As shown in the final column of the table, the AgIncentives NRA measures aggregate OECD categories C to G into a single aggregate for “Other” support, as well as payments that can be attributed to commodity output. Table 2 highlights the presence of payments—such as fertilizer subsidies—that cannot be allocated to individual agricultural commodities. Another set of policy interventions that could, in principle, be allocated to individual commodities are made to non-Market Price Support (non-MPS) commodities for which estimates of policy transfers resulting from trade policies are not available[[1]](#footnote-2).

Table : General classification of payment categories and NRA indicators

| **Policy Categories** | **Com. 1** | **Com. 2** | **Group x** | **Non-MPS** | **Unallocated** | **Total** |
| --- | --- | --- | --- | --- | --- | --- |
| A1. Market Price Support | NRP1 | NRP2 | NRPx | NRPXE |  | NRPT |
| *A2. Payments based on output* |  |  |  |  |  | NRA\_Output |
| *B. Payments based on input use* |  |  |  |  |  | NRA\_Input |
| *C. Payments based on current C. A/An/R/I, production required* |  |  |  |  | Group commodity/sector | NRA\_Other |
| *D. Payments based on non-current A/An/R/I, production required* |  |  |  |  | Group commodity/sector |
| *E. Payments based on non-current A/An/R/I, production not required* |  |  |  |  | Group commodity/sector |
| *F. Payments based on non-commodity criteria* |  |  |  |  | Group commodity/sector |
| *G. Miscellaneous payments* |  |  |  |  | Sector (crop/livestock/Agriculture) |
| TOTAL by commodity | NRA1 | NRA2 | NRAx | NRA XE |  | NRA |

Source: Authors’ classification based on OECD methodology

**4. What do we learn from the Measures?**

Figure 3 below presents average global NRPs weighted by production quantity as seen in the above equations. Figure 3 also includes the FAO Food Price Index based on international prices weighted with average export shares for 2002-2004. As seen below, there appears to be a tendency for the global NRP for the agricultural sector to rise over time until 2015, although values are positive (except for 2008), showing that overall agricultural policies have protected farmers in the countries providing protection, as long as the depressing impact of protection on world prices is not taken into account. Since 2015, protection declines slightly afterward (from 8 % in 2015 to 6% in 2020), with the latest indicates an average protection of only 3.7% in 2023. As expected, we see that the average NRP and the average Food Price Index move in opposite directions. When global food prices are rising, governments are insulating consumers, by reducing or eliminating import duties or adding export taxes that in turn reduce protection afforded to producers. The clearest example is in the 2008 and 2011 food price crises, with the drop in global average NRP and the jump in the global Food Price Index. This effect reflects two factors—a tendency for policy makers to resist increases in world prices by lowering protection, and the tendency for such declines in protection to raise world prices by increasing demand for food and, in the case of export restrictions, by reducing the supply of food onto world markets (Martin, Mamun and Minot 2024).

Figure : Average NRPs for agriculture and the FAO Food Price Index

Source: AgIncentives database and FAO (2025)

In Figure 4, we present the average NRPs for the agricultural sector categorized by income levels of countries. For the period shown, high income countries have generally provided higher protection for their farmers, although the average protection rate has declined in the last decade. Middle income countries had lower NRPs on average than high income countries, but this has increased over time and converged to the lower rates of high-income countries, such that the two average NRPS have been almost identical for the last decade. Low-income countries had negative NRPs in the period shown in Figure 3, partly because this was a period of relatively high prices and partly because the agricultural sector is seen as a source of government revenue (mostly in Africa) and export commodities are frequently taxed (Anderson 1995). In the recent years (2020 to 2023), NRPs in low income countries tend to be rising in absolute terms, meaning less taxation than those observed during 2005 to 2019. One thing to note is the difference in NRPs for countries during the 2008 food price crisis. High- and middle-income countries had slightly lower NRPs in 2008 and 2011 food price crises, whereas low-income countries had higher NRPs during these price crises—a response that would have exacerbated the impacts of world price rises on domestic prices.

Figure : Average NRPs for agricultural sector by income category

Source: AgIncentives database

In Table 3, we present global NRPs by commodity for the set of 31 economies available for all years. Clearly, the variation across commodities is enormous, with the average protection rate ranging from -40 percent for tea to 15 percent for maize. The volatility over time is similarly large for many commodities, with a variance of 120 for palm oil and 70 for rice. As shown by Francois and Martin (2004), the cost of protection depends on the square of the average rate of protection and its intertemporal variance, so these results point to a highly costly system of protection. Using longer samples of data, Martin, Mamun and Minot (2024) estimated that the direct costs of protection to rice came to $33 billion per year, or more than 10 percent of the value of global rice production, with over 60 percent of that cost coming from the volatility of its protection, rather than from its average level.

Producers in livestock and dairy sectors have much higher average protection relative to crop sectors. All grains including rice, maize, and wheat receive positive price support on average. The NRP for cassava shows no price support as the table includes data for only one country (Indonesia) for this commodity. Cash crops, such as coffee and tea, often have negative NRPs, as export taxes on these commodities are frequently used to raise revenue and to lower and stabilize consumer prices. This can result in highly volatile protection rates as seen in the series for palm oil.

The differences in NRPs noted in Table 3 are primarily driven by agricultural policies, rather than by data or measurement errors. The estimates in AgIncentives are based on high quality data on domestic and border prices adjusted to the same point in the marketing chain so that the changes in their relative prices are due to trade policies alone, after eliminating non-policy measures such as additive margins or changes in the direction of trade (Martin, Mamun and Minot 2024). The results in this table avoids the risk of creating intertemporal volatility due to changes in country composition, but risks being unrepresentative of the overall average sample. This can be important because developed countries have low protection rates in many commodities, while most developing countries have high NRPs (Gautam et al 2022).

Table : Global NRPs by Commodity (%)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Commodity** | **2019** | **2020** | **2021** | **2022** | **2023** | **Average** | **Intertemporal Variance** |
| Bovine meat | 9.4 | 7.3 | 7.0 | 7.1 | 8.6 | 7.9 | 1.1 |
| Cassava | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Coffee | -4.0 | -3.4 | -3.7 | -3.9 | -3.1 | -3.6 | 0.1 |
| Eggs | 5.7 | 7.3 | 4.9 | 3.3 | 3.7 | 5.0 | 2.6 |
| Maize | 11.1 | 19.6 | 21.9 | 10.9 | 13.5 | 15.4 | 25.6 |
| Milk | -5.7 | -4.3 | -14.3 | -12.9 | -8.3 | -9.1 | 19.2 |
| Palm oil | -10.4 | -14.4 | -37.3 | -25.1 | -14.5 | -20.3 | 119.6 |
| Pig meat | 12.2 | 12.5 | 13.4 | 13.6 | 12.5 | 12.8 | 0.4 |
| Poultry meat | 15.1 | 17.8 | 15.9 | 9.3 | 12.7 | 14.2 | 10.7 |
| Rice | 15.3 | 9.8 | 23.2 | 19.3 | 1.9 | 13.9 | 69.6 |
| Soybeans | -3.6 | 1.5 | -2.7 | -2.4 | 1.8 | -1.1 | 6.4 |
| Tea | -46.2 | -37.0 | -37.7 | -36.7 | -40.2 | -39.6 | 15.7 |
| Wheat | 7.0 | 5.7 | -2.0 | -8.7 | -0.4 | 0.3 | 40.2 |

Source: AgIncentives database, sample of 31 continuously represented economies.

Summary measures for the key components of the NRA presented in Figure 5 show that the largest single component of the total NRA is generally the market price support represented by the upper, patterned section of the graph. However, as we have seen, this component is very volatile, varying with the level of agricultural commodity prices—a variation that greatly increases the volatility of global agricultural prices (Martin and Minot 2022; Martin, Mamun and Minot 2024). By contrast, the other elements of the overall NRA—payments to output and payments based on other triggers such as historical planting levels—are far less volatile as a share of the value of agricultural output.

Figure : Components of Total NRA as a share of Agricultural Output Value %

Source: AgIncentives database

Average NRA rates in developed countries declined over the last 19 years, from 36.8% in 2005 to 16% in 2023 (Figure 6). This decline was mostly driven by the market price support, reflecting a shift in more trade liberalizing policies. On the subsidy component of NRA, we see support goes mostly to others type, which include both decoupled payment and payments to factors of production. Subsidy rates that are production linked are quite small and declined from 2.3% in 2005 to 0.2% in 2023. Input subsidies as a share of output value at world prices also declined over the years, from 3.9% in 2005 to 2.8% in 2023.

Figure : Components of Total NRA as a share of Agricultural Output Value % in High Income Countries

Source: AgIncentives database

On the other hand, NRA rates in middle income countries show volatility over the years (Figure 7). Two components – input subsidy and price support – largely contribute to the total NRA rates, which is in the range of -1.0% to 12% (7.7% in 2023). Price support became negative in the years 2007, 2008 and 2011 when the world price of commodities saw price increases. This suggests that the countries in middle income countries attempted to contain price transmission from international to domestic level during those years. Input subsidies remained same more or less.

Figure : Components of Total NRA as a share of Agricultural Output Value % in Middle Income Countries

Source: AgIncentives database

Low-income countries seem taxing agriculture much as suggested by the negative NRA rates, though there seems to have been a shift in this rate lately (Figure 8). In 2005 the NRA rate was negative at 26.3% and then remained strongly negative until 2020. Negative protection rate (NRP) was the main driver of this overall NRA rates. All types of farm subsidies are very low in this now small group of countries.

Figure : Components of Total NRA as a share of Agricultural Output Value % in Low Income Countries

Source: AgIncentives database

## 6. Conclusions

The Agricultural Incentives Consortium is a broad collaborative effort on part of multiple IOs to create a common set of indicators that measure distortions to agricultural incentives, with a focus on prices. The Consortium also aims to create a community of practices that can help exchange ideas and information between organizations.

The initial output of the Consortium is to provide a global data set of NRPs based on combined IO data. This paper presents NRPs based on, but not limited to, the AgIncentives Consortium efforts. The results show that global average NRP moves in the opposite direction to the global Food Price index, suggesting that government policies, on average, reacted to food price crises of 2008 and 2011. Furthermore, it shows that trends in NRPs differed by income category, with high income countries lowering protection of producers, and middle-income countries increasing protection. There is significant variation in the average agricultural sector NRPs for low-income countries, which are now mostly in Africa.

The 2025 update of the AgIncentives database extends both the length of time for which measures of support are available and the range of measures available. The extension from NRP measures alone to a set of Nominal Rate of Assistance (NRA) measures provides a much broader view of the extent and nature of global agricultural assistance than was previously available.

One aim of this exercise is to provide a unified measurement of distortions by agricultural policies for a wide audience of academics and non-academics. This type of unified approach is designed to help analysts understand the effects of policy and governments design policies and measure their effects accurately. The global NRP and NRA measures rely on the same methodology, utilizing each IO database, in a consistent manner. They provide continuous and consistent measurements across a wide sectoral and geographical coverage, allowing stakeholders interpret the implications of agricultural policy design in an effective manner. We look forward to comments and feedback that can help improve the value of the information provided.

## Appendix

## Building an AgIncentives Release

The process of building a new AgIncentives release, as represented by Figure 1, involves the following five steps.

## 1 Review and processing of source data received from Consortium Members.

Upon receiving source or raw data and documentation files from Consortium members, the raw data files and the documentation accompanying them are reviewed. This determines the next steps– starting with updating the commodity mapping file, downloading value of production data from the Consortium and, where necessary, from FAOSTAT. The bulk of the data processing is done in Python. Consistent Python programs have been developed for each data supplier and are updated as new data arrive.

Data processing in Python takes several steps – plugging in raw data, extracting exchange rates, mapping commodities to standard nomenclature, generating sets of columns with dimension country, commodity and year and finally producing data in a standard format. In the process, the data are checked for missing information, outliers, and other consistencies.

## 2 Work on consolidating the database in R, aggregation and producing indicators

Following the first stage of data processing to the data are consolidated and put in a consolidated data file for all countries used to process the data and generate the final set of indicators. Standardized R programs are used to develop the indicators, both at aggregate and disaggregate level. Quality control is important at this stage, to identify for duplication of data, mismatch between commodities and nomenclature, missing producer and reference price data, monetary unit, and notes columns.

At the final stage, NRP and other NRA measures are computed by country, commodity, and year and at key levels of aggregation.

## 3 Review of NRA/NRP indicators and quality control, internally and by IOs

This is the final step towards producing a consistent and reliable database on NRA and/or NRP. A key element of the review process on the indicators is examination of the graphs of the indicators at different levels of aggregation - by economic, geographic and product groups and through comparison with the release of previous rounds of data.

Data are then returned to the Member Organizations to seek comments, inputs and/or suggestions for fixes.

## 4 Visualization in Tableau/R-Shiny

Once Consortium Members are satisfied with the measures generated from their inputs, currently Tableau is used to provide visualizations of the dataset along country, product (individual and broad group), economic classification and geographic regions. Our goal is to develop R-Shiny app for visualization of NRA data in the future iteration.

## 5 Release of database in the Ag-Incentives website

Release of the NRA/NRP database takes place when the data have been scrutinized and visualizations are available. Access to full database is available through the website, as well as standard visualizations.

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The AgIncentives Consortium brings together data on agricultural protection—and taxation—for countries accounting for 90% of global agricultural output. Policies directly affect incentives that farmers benefit from or face and affect not only the countries using these measures but also the level and volatility of world prices of food and agricultural products. Before the impacts of these policies can be understood, they must be carefully measured and presented on a comparable basis. By working together, our team of five member international organizations provide unprecedented coverage of these vitally important measures. The AgIncentives website allows users to visually compare data on almost 90 countries and 70 products over 14 years. Download data to perform your own analyses.

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1. As explained above, the prices of non-MPS commodities are not available or non-studied, and we assume that the rate of policy transfers is the same asfor the MPS commodities. [↑](#footnote-ref-2)