行政院及所屬各機關出國報告
（出國類別：其他）

參加亞洲生產力組織(APO)亞洲農業政策研究協調會議

服務機關：行政院農業委員會企劃處
姓名職稱：張大川科員
出國地區：日本（東京）
出國期間：民國 104 年 7 月 21 日至 104 年 7 月 25 日
報告日期：民國 104 年 10 月 20 日

目錄

壹、摘要與目的

一、摘要

「亞洲生產力組織（Asian Productivity Organization，簡稱 APO）」為我國積極參與之國際組織（我國為創始會員國之一），該組織每年配合各會員國經濟發展之實際需要，擬定工作計畫，針對特定重要議題，透過考察團、研討會、講習會、訓練班、個別研習，或指派專家赴各國進行指導，期以協助各會員國工、農及服務業提高生產力。

本次會議主要係延續 2013 年進行「亞洲農業政策研究」的計畫，當時參加會員國為我國、印度、印尼、馬來西亞、巴基斯坦及泰國，主要研究範疇為亞洲會員國近幾年之農業政策趨勢、估計「生產者支持估計量」（Producer Support Estimate，簡稱 PSE）指數與應用，並且摘錄參加會員國之專家研究報告。而本次會議除了進行 PSE 更新外，亦與各會員國之專家討論 PSE 估計模型之修正方向，以符合國際上研究之趨勢。

二、目的

長久以來，APO 與會員國進行之交流模式，主要係透過辦理研討會方式舉行，為期數日或數週，各會員國均推派專家學者出席，並進行各國相關議題之簡報，其模式與演講類似，並未針對某個議題進行研究，且亦未將其成果印刷成刊物。該模式之運作，僅能將研究之能量提供至專家本身，未能將其研究能量擴散至各界參考。

而前次研討會所進行之研究成果，APO 將其印刷成刊物，並提供給各會員國與相關政府部門參考，有助於相關農業政策之調整，獲各會員國肯定。APO 為擴展其研究能量之影響力，續辦此計畫，並規劃將再出版刊物，提供各界參考。

此外本研究首次於 2003 年舉行，並於 2008 及 2013 年舉行第 2 次與第 3 次之研究會議，然會員國可能因為研究能量不足、統計資料未齊全或其他種種因素，未能推派專家出席此研究會議，故導致每次研究會議參與之專家均有所不同。我國為歷次研究會議中均有推派專家學者出席之會員國之一，而本次會議較前次會議新增斯里蘭卡與 OECD 專家，並新增緬甸為觀察員之身分，除更新 PSE 之研究成果外，亦期望透過長年參與專家之分享，輔助新加入之專家進行本次研究工作。

貳、過程

一、參與成員

表一、亞洲農業政策研究各會員國參加名單

序號	國家	姓名	職稱	單位
1	中華民國	陳郁蕙	教授	臺灣大學農業經濟系
2	印度	Mr. Avinash K. Srivastava	輔助秘書	印度農業部農業與合作處
3	馬來西亞	Dr. Tengku Mohd Ariff Tengku Ahmad	主任	馬來西亞農業研究和發展研究所
4	巴西斯坦	Dr. Abdul Salam	教授	巴基斯坦聯邦烏爾都語藝術、科學與技術大學
5	斯里蘭卡	Dr. Rasnayaka Mudiyanselage Herath	資深農業經濟學家	斯里蘭卡農業部社會經濟學和規劃中心
6	泰國	Dr. Boonjit Titapiwatanakun	教授	泰國農業大學經濟學院農業和資源經濟學系
以下為觀察員身份				
7	中華民國	張大川	科員	行政院農業委員會企劃處
8	緬甸	Mr. Kenichiro Kobayashi	專家	緬甸農業與灌溉部

二、參與行程

表二、亞洲農業政策研究行程表

日期	時間	內容	報告人
2015/7/22	09:30-09:50	開幕會議	APO 代表
	09:50-10:00	休息	
	10:00-10:20	報告： 本計畫研究方向	APO 代表
	10:20-11:00	報告： OECD 使用生產者支持估計量於政策分析與監測之成果	OECD 代表
	11:00-12:00	報告： APO 農業研究的主要結論與回饋	APO 代表
	12:00-13:00	午餐	
	13:00-13:40	報告： 近年東協國家農業政策的轉變	Dr. Boonjit(泰國)
	13:40-14:40	報告： APO 農業政策之研究中主要發現與學習	陳郁蕙教授
	14:40-15:00	休息	
	15:00-16:20	報告： 近年國際農業政策的轉變	各國專家(印度、馬來西亞、巴基斯坦、斯里蘭卡)
	16:20-17:00	討論與總結	
2015/7/23	09:00-10:00	報告： 亞洲農業政策研究概況	APO 代表
	10:00-10:20	休息	

	10:20-12:00	報告： 亞洲農業政策研究新的架構與分析框架	APO 代表
	12:00-13:30	午餐	
	13:30-15:30	報告： 新修訂之研究指南與 APO 參考	APO 代表
	15:30-15:45	休息	
	15:45-17:00	討論與總結	
2015/7/24	09:00-10:30	報告： 各國簡報與討論	各國專家(泰國、馬來西亞、我國)
	10:30-10:45	休息	
	10:45-12:15	報告： 各國簡報與討論	各國專家(印度、巴基斯坦、斯里蘭卡)
	12:15-13:30	午餐	
	13:30-16:00	共同研究方法之建立與討論	

參、參與紀要

一、PSE 的使用

農業支持指標大多係以不同目標間的價差，來衡量各種政策干預的影響程度，而在眾多的農業支持指標中，PSE 由於估計的合理性與使用上的便利性，遂成為農業支持相關的研究中，最廣為使用的指標之一（陳厚傑, 2010；Josling & Tangermann, 1989）。在 1987 年 OECD 接受以 PSE 作為各國農業支持程度的衡量指標後，OECD 每年皆對其會員國以及觀察員國進行 PSE 監測，因此 PSE 成為世界上唯一一個長期、有系統且參加國家數眾多之農業支持估計指標（陳厚傑, 2010；Josling & Valdes, 2004；Melyukhina, 2008）。

考慮到 PSE 為長期且多數國家均使用之估計指標，APO 亦選擇以 OECD 選定的 PSE 來估計其會員國之農業支持程度，而相對於 WTO 所採用的農業境內總支持（Aggregate Measurement of Support, 簡稱 AMS），PSE 擁有更多理論基礎，計算消費者、納稅人及生產者間之所得移轉，並且嘗試納入所有農業補貼措施，以用於檢視各國農業政策。

二、PSE 估計結果

我國 1990 年至 2007 年間 PSE 水準平均為 740 億元，而 PSE 比例（PSE 除以農民收入毛額之比例，用於國際間之比較）平均為 26.2%，與 OECD 所計算的 13 個國家相比，我國相當於第 7 位（依序為瑞士 68.61%、挪威 68.25%、冰島 66.36%、韓國 65.98、日本 56.13%、歐盟 34.08%、臺灣 26.21%、加拿

大 21.78%、土耳其 21.34%墨西哥 17.40%與美國 16.68%）（陳厚傑,2010）。另外依據前次 APO 所辦「亞洲農業政策研究」計畫研究成果，我國 2008 年 PSE 比例約為 26%，在參與研究的 6 個 APO 會員國中排名首位（日、韓另由 OECD 估算，比我國高），其他會員國 PSE 比例依序為馬來西亞、印尼、泰國、印度及巴基斯坦。

三、其研究活動共分四階段進行：

階段	預計時間	里程碑
1	2015/7/22~7/24	協調會議：與各會員國專家學者共同討論並規範研究之標準
2	2015/7~2016/3	計算 PSE 報告：由各專家計算並更新各會員國之 PSE 數值
3	2016/4~2016/12	計算結果呈現：各專家需將研究成果進行報告，並由國際專家負責檢視其與其他會員國之結果之一致性，同時彙整所提供資料，以利出版刊物
4	2017/1~2017/3	編輯與印刷：完成編輯與出版刊物

1. 第 1 階段：協調會議（2015/7/22~7/24）

本階段係透過與各會員國專家學者進行溝通討論、重新檢視研究方法，取得一定共識基礎，以利未來估計 PSE 時能有一致的準則。除此之外，亦需

討論未來此研究成果所出版刊物之結構，方便出版刊物時格式一致。

2. 第 2 階段：研究 PSE 報告（2015/7~2016/3）

本階段主要係由各會員國專家學者負責蒐集可靠的資料，初步計算 PSE 數值，並用此來分析農業政策在農業的生產、消費和交易、市場價格等層面的支持程度。此外，在此階段 APO 負責本計畫的首席學者與國際上專家將會提供諮詢服務，以期本研究成果與 OECD 的方法趨於一致性。

3. 第 3 階段：計算結果呈現（2016/4~2016/12）

本階段各會員國專家學者需將所計算之 PSE 於會議上討論，同時分析各國 PSE 之水準。此外為使研究之結果有其可信程度，各國專家學者需將研究之數據提供國際學者檢驗。最後於會議上需討論出版刊物之結案報告。

4. 第 4 階段：

本階段將最後討論之結案報告進行語法之校正、設計與排版後，將其出刊成為「亞洲農業政策研究第二版」，並提供給各會員國參考。

肆、參與心得與建議

一、參與心得

1. PSE 係目前國際上多數國家或組織用來估算全部農業支持水準之有效指標，APO 與 OECD 組織等均已用此指標進行長期的分析與比較各國之間的水準。在計算 PSE 指標上，需要蒐集大量且精確的數值，其中不僅僅只有農業類的統計數據，亦包含其他如財政、稅務、匯率等其他業務機關所公布之資料。我國相關資料之建立相對完整，蒐集利用較其他會員國便利，爰本次會議中主要係擔任經驗分享之角色，提供其他會員國有效率之估計方法。
2. 我國 PSE 之水準與 OECD 估計的 13 個國家比較，相當於第 7 位，亦低於 OECD 會員國之平均值，且我國該數值亦呈現小幅度降低之趨勢。由此可見，我國在農業支持之力道已經逐年有所調整，亦符合 WTO 組織要求逐漸降低農業支持之精神。雖我國 PSE 之水準在與參與研究的 6 個 APO 會員國之中排名最高，並未表示我國相較於其他 APO 會員國對農業支持力道較大，其原因可能係我國建立資料相對完整，已儘可能把各種農業支持政策都確實涵括；而其他國家相關數據分散在各機關中，在蒐集統計資料上可能有其難度，以致某些農業支持政策之保護效果未確實涵括，例如部分國家並未建置相關統計數據，需參考由全球大型農業組織所提供之統計數據，方能計算該國之 PSE 數值。

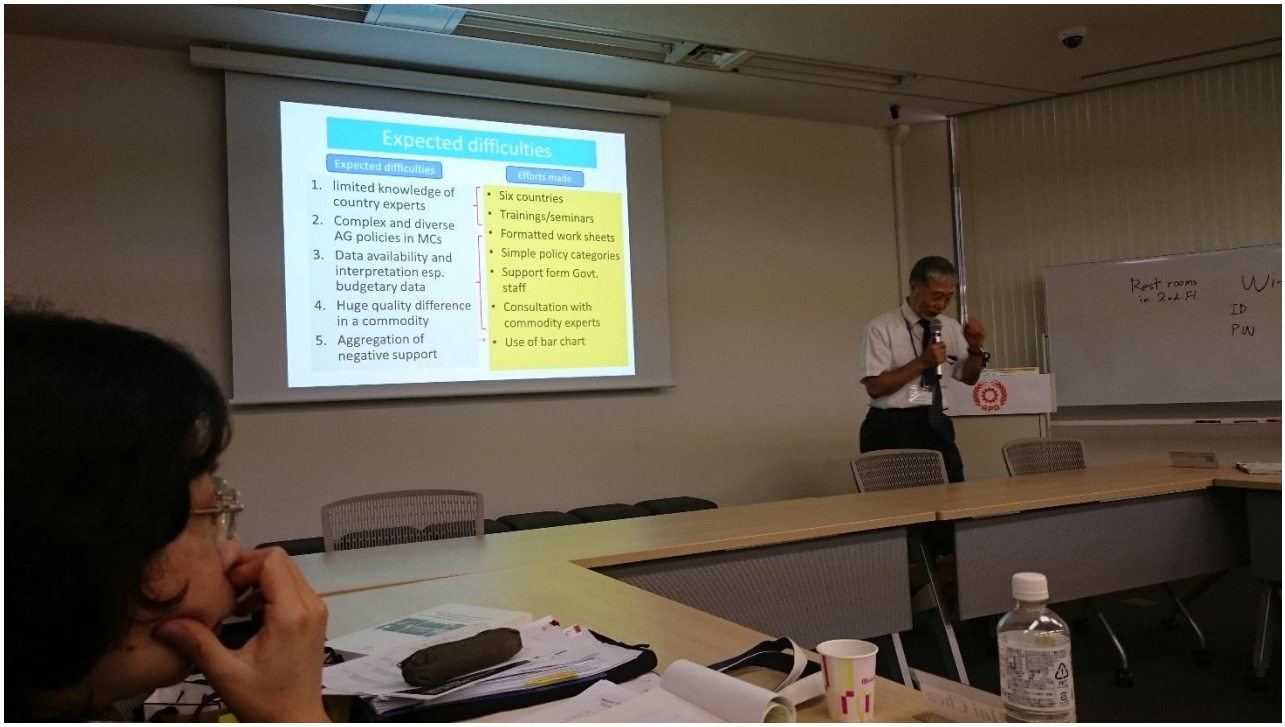
二、參與建議

1. 我國長年參與 APO 組織之計畫，已有諸多成效，本次估算 PSE 之計畫亦被視為可擴大影響 APO 會員國決策之重要數據，在其估算上勢必需投入研究較多研究能力與成本，而在估計上我國業已多次推派國立臺灣大學農業經濟系陳郁蕙教授擔任專家，負責蒐集相關資料與進行長期之分析，未來如需更新年度資料，則建議需與教授密切聯繫與配合，以期估計之結果具有一致性。倘未來如未能推派資深專家出席會議時，應將估計結果所需之邏輯、蒐集資料種類、研究分類方法等訊息傳承下去，以利計畫延續進行。

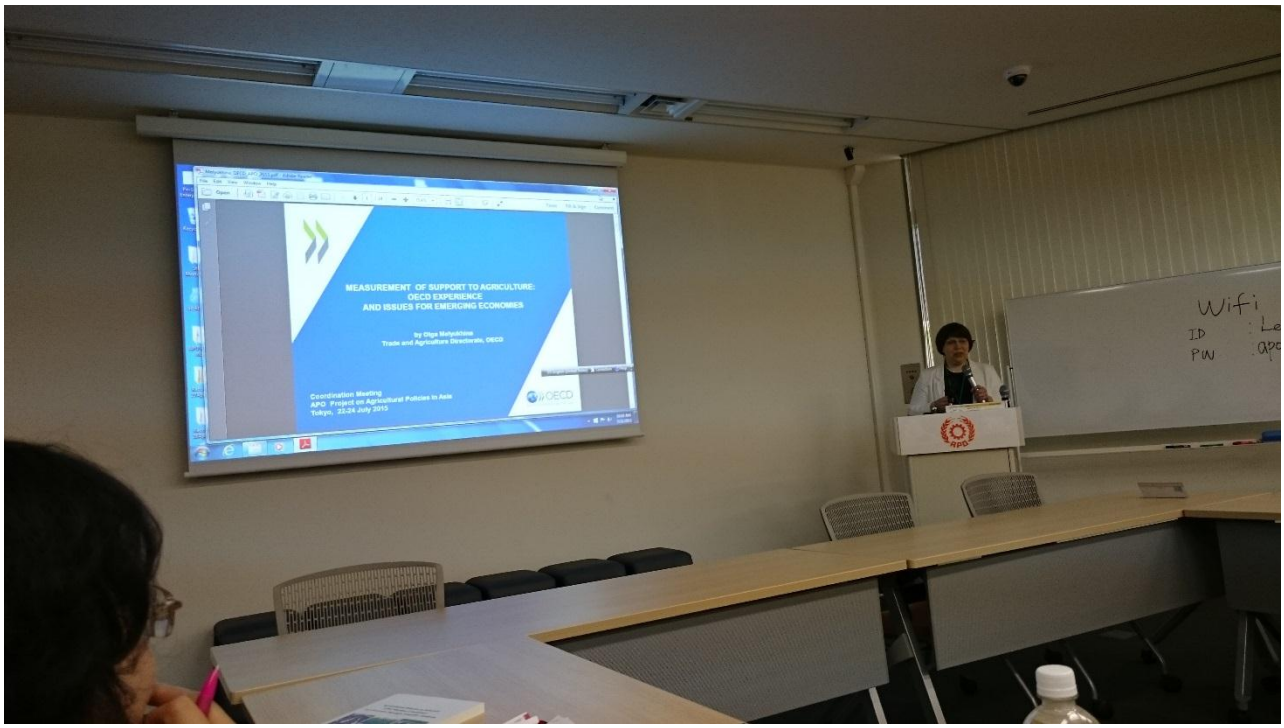
2. APO 為我國長年參與之國際組織，且我國亦為創始會員國之一，在 APO 組織中具有一定影響力，且多次協助其會員國相關專家學者來臺學習我國農業經驗，拓展我國農業外交能力。倘未來 APO 因財務及國際因素等，邀請中國大陸入會，恐將影響我國在 APO 組織中之地位，故應對各國加強我國之影響力，如多推派政府官員或學者參與各項計畫，協助各會員國共同完成 APO 所訂課題，亦建議積極推薦國人擔任 APO 職員，展現我國之貢獻及鞏固我國之會員地位。

伍、附錄

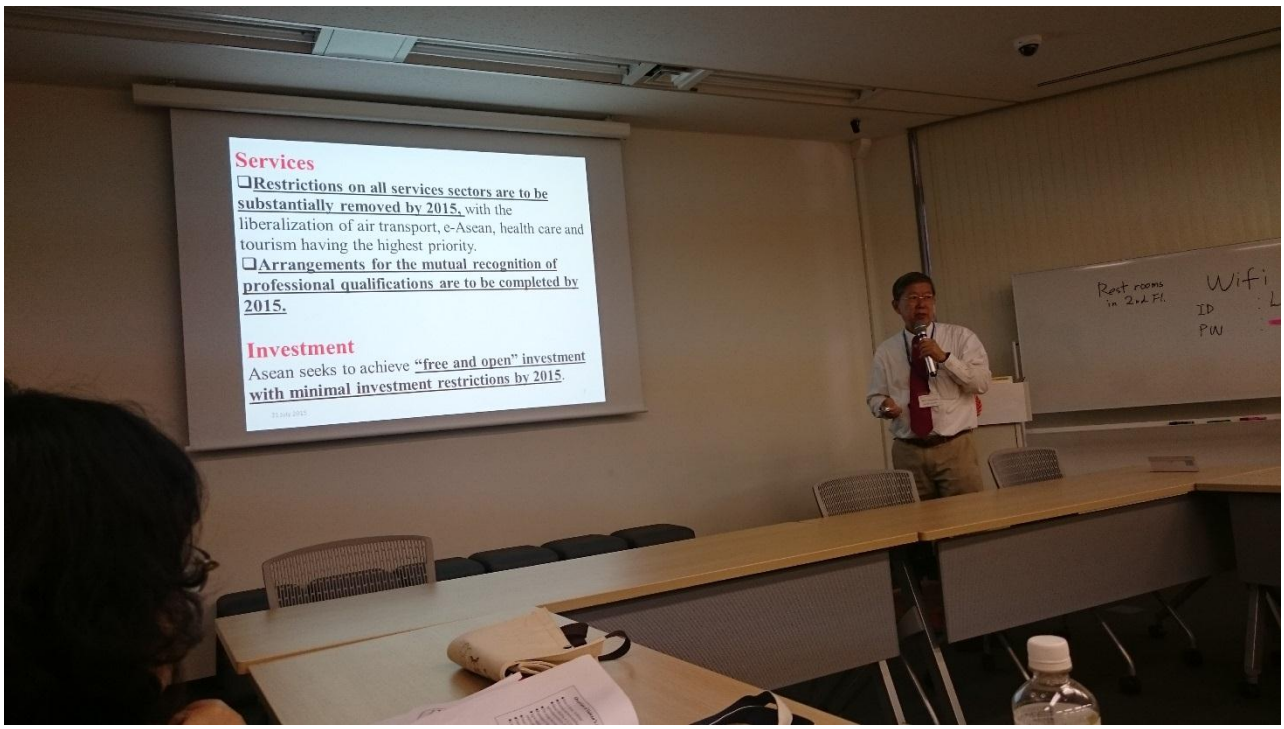
一、參與照片



圖一、APO專家Dr. Kunio Tsubota專家報告



圖二、OECD學者Dr. Olga Melyukhina專家報告



圖三、泰國學者 Dr. Boonjit Titapiwatanakun 專家報告

圖四、我國學者陳郁蕙教授專家報告

圖五、我國學者陳郁蕙教授研究成果報告

圖六、各國專家學者團體討論

二、巴基斯坦專家簡報

Measuring Agricultural Support: Conceptual Problems and Data Challenges

Presentation by
Prof. Dr. Abdul Salam
Experts Meeting of
Asian Productivity Organization,
July 22-24 2015
Tokyo

Agricultural Support

- OECD uses term 'support' to describe monetary value of transfers, resulting from agricultural policies, which raise farmers' revenues or reduce their costs.
- A policy measure is included in the estimation only if farmers, either individually or collectively, are the only or principal group benefitting from the support.
- Producer Support Estimate (PSE) – accounting of monetary value of the support arising from many different types of policy measures.

Agricultural Support

- Total Support Estimate (TSE)consist of transfers to:
  - Agricultural producers,
  - Consumers and
  - Support of general services to agricultural sector
- Transfers to agricultural producers, also called producer support estimate, (PSE), include:
  - Market price support,
  - Budgetary payments and
  - Cost of revenue foregone by the government and other economic agents

Market Price Support

- Market Price Support, (MPS), : Policy measures maintaining domestic prices of farm commodities at higher levels than those of at country's border
- Estimating MPS involves compilation of data on domestic market prices and their comparison with world market prices of comparable quality
- In this exercise a number of conceptual problems and practical difficulties have to be resolved
- Such issues highlighted in the presentation later

Budgetary Transfers

- Budgetary transfers– arising from policy measures providing payments to farmers based on criteria such as:
  - Quantity of a commodity produced
  - Amount of inputs used
  - Number of farm animals
  - Area sown / operated
  - Payments to input suppliers to compensate them for charging lower prices to farmers or subsidize provision of farm services
  - Revenue Foregone: measures providing for implicit transfers through tax concessions or fee reductions that lower farm input costs; (e.g for credit, water, electricity etc.)

General Services Support Estimates

- GSSE: annual money value of transfers from policy measures which support producers collectively.
- These, inter alia, include expenditures on:
  - Agricultural research, training, education, extension
  - Inspection
  - Infrastructure
  - Public stock holdings and
  - Marketing and promotion

Note: GSSE not included in PSE calculations

Expressing PSE

- PSE: Ex post measure of gross transfers to producers based on observed output and prices.
- A product specific PSE can be expressed in monetary value per unit of output.
- From unit value of PSE, aggregate monetary value for total production of the given commodity can be estimated.
- The product specific PSEs can be aggregated for a sub set of commodities or for all agriculture.
- PSE may be expressed in percentage terms, as a % of the value of production.

Expressing PSE

- Agricultural support may be expressed in monetary terms (Rs, $) or in relative terms %
- %PSE expresses the value of monetary transfers as a percentage of the value of gross farm receipts (including support)
- Nominal Assistance Coefficient (Produce NAC): the ratio between the value of gross farm receipts including the PSE and the gross farm receipts valued at border prices without the PSE values.

Details

- Now we turn to the details involved in:
- MPS calculations and
- Budgetary support and
- Revenues foregone

Estimating Market Price Support

- Comparing domestic farm gate price. Pd, with an adjusted reference price, Par.
- Par=Pr + (Cp+Td1) – (Td2 + M)– Qadj… importable
- Par = Pr – (Cp + Td1) – (Td2 + M) – Qadj
- Pr is the reference price at border, world market c.i.f. price for an import expressed in domestic currency
- Reference price for exports is F.O.B price expressed in domestic currency

Estimating Market Price Support

- Reference price derived from unit values for imports/ exports of the country.
- Alternately, these can be estimated from observed international prices adjusted for international transportation costs.
- In this alternate case, reference price, pr, can be imputed from the f.o.b. price of a major exporting country: P exporter fob + international freight, Ti, and other international costs (including insurance and margins) of moving commodity from exporting country to importing country, Ci. Thus, Pr = P exporter fob + (Ti +Ci)

Estimating Market Price Support

- The reference price, Pr, for an export commodity (in case country specific data not available) can be imputed from c.i.f. price of a major importing country by subtracting the costs associated with international movement of the commodity.
- Here, Pr = P importer cif – (Ti +Ci)
- Having determined the reference price rest of the procedure is the same as given in previous case when country specific data are available.

Estimating Market Price Support

- Cp= port charges
- Td1 = costs of handling, transporting and marketing the commodity between the port and the wholesale market
- Td2 = costs of handling and transport, and
- M = cost of marketing and processing commodity between farm and wholesale market
- Qadj= to account for quality differences between the domestic and internationally produced commodity.

… cont…

Estimating Market Price Support

- Price gap = Pd- Par, Pd is domestic market price
- Price gap or price wedge the difference between domestic market price and border price is monetary measure of MPS per unit of output
- This price gap captures the differences between domestic and border prices induced by visible and invisible policy interventions

Data Requirements for MPS

- Estimating MPS involves calculating gap between domestic and border prices of various agricultural commodities.
- Data on domestic wholesale prices of important commodities are generally available.
- However, there may be questions about its quality, and timing- whole year average or for the marketing season only
- Border prices need to be carefully estimated and require detailed information about various marketing costs, port incidentals which may not be readily available for all the commodities

Data Requirements for MPS

- MPS calculations will also need robust estimates of crop size, marketed share and farm gate price of the produce.
- Data requirements multiply with the number of crops.
- Some of the crops and vegetables may be consumed domestically with no trade.

Data Requirements for MPS

- Market price support: current scope of administered commodity prices limited to wheat and sugarcane.
- Historical data on wheat import prices and related costs may be available.
- Market price support for wheat can be estimated by estimating the wedge between its import parity and domestic market or administered support price.
- An important question here is the average of domestic market price: average for the whole year or for post harvest period only?

MPS for Wheat

- Another important question in the context of wheat relates to the type of wheat grown and or imported/ exported.
- For marginal surpluses what to do?
- Pakistan has been a regular importer but has turned exporter in some years of surplus.
- This poses an important question of using reference price of import or export parity in calculating the gap between domestic and border prices to estimate market price support.

MPS for Wheat and Maize

- Moreover, data on export incidentals hard to get.
- Maize is an important cereal in which Pakistan has achieved significant gains in its production.
- But most of the produce is used in domestic food and feed industry.
- Data on incidentals entailed in trade?

MPS for Sugarcane and Sugar

- In case of sugarcane farmers produce and sell sugarcane. But trade is in sugar.
- Working backward from sugar prices to arrive at the cost/ price of sugarcane, interalia, requires data on processing costs, sucrose recovery and milling efficiency. Data on various byproducts obtained during processing and values thereof also required.
- Such data are hard to come buy and is an exercise by itself.
- Data on costs entailed in imports/exports of sugar also problematic.
- Questions about the quality of produce; brown or white sugar also need to be addressed depending on country specific situation.

MPS for Rice and cotton

- Pakistan has a history of intervening in rice and cotton markets, two of the important traded commodities.
- Both these commodities involve processing before trading in international market.
- In case of rice, farmers produce and sell paddy but international context is for cleaned rice, involving milling, polishing, grading, packaging etc. Thus , data on costs of milling, recovery of head rice, brokens and values thereof are needed.
- Similarly, in cotton crop, farmers produce and sell seed cotton, "Phutti", which has to be ginned/processed into cotton (lint) before going to international market.
- There is also substantial trade in yarn of different counts, involving further processing of cotton lint.

Budgetary Subsidies: Data

- Purchased farm inputs include:
  - Chemical fertilizer
  - Pesticides
  - Seed
  - Farm machinery and equipment
  - Diesel
  - Electricity and
  - Institutional credit for production and development loans
  - Irrigation

Budgetary Subsidies: Data

- Crop specific data on use of various farm inputs, other than seed, may not be available.
- Apportionment of these data to various crop predicated on certain assumptions.
- Different inputs may also be subjected to varying levels of general sales and withholding taxes.

Thank You

三、印度專家簡報

DATA AVAILABILITY & POSSIBLE DIFFICULTIES IN MEASUREMENT- INDIA

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Government of India

Structure of Presentation

- **Crop Production-** Difficulties in estimation
- **Agricultural Prices Data** - Sources & difficulties faced
- **Trade Statistics** - Measurement & limitations
- **National & State Budgets**

Crop Production- Difficulties in estimation

Process of Estimation of Area, Production ,Yield (APY) data

- Directorate of Economics & Statistics (DES) of Dept. of Agriculture (DAC), Govt. of India releases estimates of **Area, Production & Yield (APY)**
- APY estimates of principal crops of **Food Grains, Oil Seeds, Sugarcane & important commercial and horticulture crops** covered accounting for 80% of agricultural output
- APY estimates are provided to DES, GoI by State Governments through their State Agriculture Statistics Authorities (SASA) or Agri Depts (4 Advance Estimates and one Final Estimate)
- DES GOI validates these using past trends, remote sensing data , rainfall data, reservoir positions etc

Estimation of APY Data

- **Area –** Land use statistics based on cadastral survey available in 86% of reporting area; 20% villages selected at random and complete area enumeration (Girdawri) done by state revenue /agriculture authorities
- **Yield-** estimated through scientifically designed Crop Cutting Experiments (CCE)
  - Stratified multi-stage random sampling design used for carrying out CCEs; Sub district/ Block as Strata, Revenue Village within a stratum as first stage unit of sampling, 2 fields growing the experimental crops within each village selected as 2nd stage unit of sampling, experimental plot of specified shape & size as the ultimate unit of sampling
  - CCEs planned for food crops & non food crops, and for Kharif (June- September) & Rabi(November- March) seasons
  - Around 1 million CCEs planned every year
- **Production-** is the product of Area and Yield.

Advance Estimates of Area & Production

- Period of agricultural crop year from July to June
- Different crops grown during agricultural seasons in a crop year
- Final estimates of production based on CCEs become available much after actual harvest of crops
- Govt. requires advance estimates for policy decisions on **pricing, export, import, marketing, etc.**

Advance Estimates of Area & Production

- **First Advance Estimates** of Kharif crops in September; based on visual observation
- **Second Advance Estimates** in January; revision of estimates / second assessment of Kharif Crops & first advance estimates/first assessment of Rabi Crops
- **Third Advance Estimates** in March end / April beginning; validated with information from SASAs, remote sensing data
- **Fourth Advance Estimates** in June/ July, by which time most of Rabi crops get harvested
- Final Estimates in December / January of following agricultural year

Use of Space Technology in Forecasting agricultural outputs

- National Crop Forecast Centre (NCFC) manned by space scientists set up in DAC to operationalise Remote Sensing methodology developed by Indian Space Research Organisation (ISRO)
- Econometric, Agromet & Remote Sensing (RS) based model to generate crop forecasts at beginning of season, mid season and harvest stage of crop growth
- Also used for assessment of drought situation
- Estimates of APY generated for 8 major crops; used to validate the estimates of DES

Limitations in Estimates of Area

- Patwari / Lekhpal / Talathi is the first level revenue officer in the villages
- Heavy work load due to multiple responsibilities of revenue related work, flood/drought relief, identification of welfare schemes beneficiaries etc.
- They give inadequate attention due to wide physical jurisdiction and large number of entries in each season.
- Heavy workload on revenue officers leads to delay in /non-completion of Girdawri and discrepancies in crop entries
- Truncated coverage

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Limitations in Estimates of Production

- Limited time window for CCE at time of harvesting
- Non-responsiveness of farmers
- Wide variation in productivity across regions, across farmers, between irrigated and un-irrigated areas. This, and large number of small holdings leads to challenge in design of appropriate sample.
- Old method of Crop Cutting Experiments (CCE); less number
- Delay in flow of data
- Manipulation at local level- Officers responsible for crop development also do CCEs

10

Limitations in Estimates of Production

- Crop Insurance requires yield estimates at village level. This has increased the number of crop cutting experiments considerably.
- This has imposed enormous burden on the field agencies.
- Increased the non-sampling errors considerably.
- Resulted in deterioration in quality of data.
- Markets not functioning properly in many states hence market arrival data not available to estimate production.

Inter Agency Variation in Estimates of Cotton and Sugarcane Production

- Official Estimates of Cotton Production are compiled from reports of State Agricultural Statistics Authorities (SASAs) based on area estimates as per revenue records and yield as per CCEs.
- Trade organizations also assess cotton production based on market arrivals and feedback from ginning/pressing mills.
- While Estimates of area coverage are comparable, there are large variations in the Official Estimates and Trade Estimates of Cotton Production.
- Similar problem of variation exists in the data on area and production of sugarcane reported by SASAs and Cane Commissioners in some States.

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Suggestions for Improvement

- Use of Remote Sensing Technology
- Use of UAV / drones
- Development of crop model based on yield zones / maps, multiple indices
- In the interim, use of GPS / cameras for CCEs

Agricultural Prices: Sources & Difficulties in Data Collection

Sources of Price Data

- Directorate of Marketing & Inspection (DMI), and DES - agencies under DAC involved in the collection of primary agricultural price data from different markets.
- Market Intelligence Units of DES, DAC collect weekly price data from 700 Agriculture Produce Marketing Committees (APMCs) which is used for Weekly Wholesale Price Index (WPI)
- DMI has set up an e-portal, Agmarknet, in which data of daily market arrivals and prices at which they are sold in the various Mandis (Markets) is captured
- A separate Department of Consumer Affairs of Govt. of India monitors daily Wholesale & Retail Prices of essential commodities; data collected from Food & Civil Supplies Departments of the State Governments
- National Horticulture Board publishes data on arrivals and prices of fruits & vegetables

Dissemination

- Wholesale price data from the DMI available on a daily basis on its web portal, www.agmarknet.nic.in.
- Wholesale and retail price data collected by DES also available on its website, http://eands.dacnet.nic.in.
- DES also publishes an "Agricultural Prices in India" report.
- Department of Consumer Affairs data is available on its website

Problems in Measurement of Prices

- In most markets there are no transparent and reliable systems to capture prices.
- Data on prices not available with quantities traded at these prices in most cases.
- Wide variation of prices across regions due to transportation and other costs. Hence difficult to arrive at reasonable national average prices.
- Prices of agri commodities depend on variety and quality, hence difficult to compare prices of same commodity across mandis.
- Methodology of collection- differs from agency to agency

Problems in Measurement of Prices

- Mandis under Agmarknet Scheme report three types of prices data–
  - Minimum wholesale prices of the day
  - Maximum wholesale prices of the day
  - Modal prices – price at which most transactions of the day takes place
- Data Entry Officials (DEOs) commit mistakes in identifying the correct prices/arrival data from auction slips- Need proper training and stability
- To evade the market fee, sometimes prices are quoted below MSP pretending the produce to be below FAQ and transacted on mutual consent of buyers-sellers.
- Produce transacted outside market yard by licensee and procurement agencies remains unreported

Areas that need improvement

- Collection of agricultural prices should follow appropriate statistical standards during the various stages of data collection;
- Harmonization of different data sets
- Avoid duplication of efforts by different agencies;
- Availability of both Wholesale and Retail price data on a single platform on a daily basis.; and
- Development of a user-friendly platform for sharing the price data, with plugged-in analytical tools to generate early warning and intelligent market reports.

Trade Statistics - Measurement & limitations

Office of Trade Statistics

- The Directorate General of Commercial Intelligence and Statistics (DGCI&S), Kolkata, under the Ministry of Commerce, Government of India, is the pioneer official organization for collection, compilation and dissemination of India's Trade Statistics and Commercial information. http:www.dgciskol.nic.in.
- Statistics on Services Trade is collected by Reserve Bank of India (RBI)

Trade Statistics

- Export : On the basis of Daily Trade Returns (DTR) prepared by the customs authorities of Shipping Bills.
- Imports : On the basis of Bills of Entry
- Customs transmit these Bills online through electronic data exchange (EDI) & non EDI mode
- Currently Foreign Trade data is based on more than 150 lakhs records processed every Year.
- Processed data is categorized into Commodity (ITC-HS code, 8 Digit X Country)
- The activities comprising service sector are classified on the basis of National Industrial Classification (NIC) which follows the International Standard Industrial Classification (ISIC) given by UN Statistics Division (UNSD.)

What is ITC-HS Code

- How can the items/commodities be specified in World Trade so that these can be comparable?
- From April, 1987 onwards, trade is recorded as per Indian Trade Classification based on the Harmonised Commodity Description and Coding System (ITC-HS).
- The **Harmonized Commodity Description and Coding System**, also known as the **Harmonized System** (**HS**) of tariff nomenclature is an internationally standardized system of names and numbers to classify traded products. It came into effect in 1988 and has since been developed and maintained by the World Customs Organization (WCO)

Measurement issues in Trade Data

- EDI captures around 90% of export transactions and 94% of imports transactions (In value terms, EDI captures around 68% exports and 77 % imports).
- Foreign trade data at the Principal Commodity level is released with a lag of 30 days and at the 8-digit commodity level with a lag of 60 days. To reduce the time lag in release of FT data, delay in data transmission has to be reduced. This will require increasing the coverage of EDI ports by converting Manual and non EDI ports into EDI ports
- Standard units to be made mandatory for all import and export transactions. The recording unit, as convenient to the importer/exporter could be mentioned for the convenience of individual traders. Around 38% of the transactions in exports and 35% of transactions in imports had been reported in non standard units in 2014-15.

Measurement issues in Trade Data

- Reducing mismatch in recording commodity codes & description through development of tools to facilitate location of appropriate HS codes and sensitising the exporter/importer on the benefits of assigning correct codes. Around 7% of the transactions in exports and 4% of transactions in imports had to be corrected for incorrect ITC HS codes in 2014-15.
- Generating import data both by country of origin as well as country of consignment to estimate the quantum of indirect trade. This will help in reconciliation of trade data with our partner countries.
- As per UNSD data on re-exports and re-imports is to be provided separately. This has not been possible after the introduction of EDI system for data transmission.
- A lot of heterogeneity within commodity groups can be captured if 8-digit commodity codes currently used in India is extended to 10 digits as adopted by countries like USA, China etc.

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Difficulties in Measurement of Trade

- Mis-invoicing
- Export under invoicing
- Import under invoicing
- Porous land borders with neighbours like Nepal, Bhutan and Bangladesh
- Imports directed from countries other than actual countries of origin.

Service Trade Statistics

- In India, the country's central bank publishes data on services trade in its regular publication 'Reserve Bank of India Bulletin' and its website rbi.org.in
- Services trade is collected by RBI through the Foreign Exchange Transaction Electronic Reporting System (FETERS) implemented under the Foreign Exchange Management Act (FEMA).
- The RBI data cover only those merchandise transactions which result in the receipt or payment of foreign exchange.
- RBI also conducts periodic surveys to collect and compile disaggregated level data for a number of important services categories, like Computer Software & Information Technology, International Trade in Banking Services, Survey on Foreign Collaboration in Indian Industry etc
- Agriculture trade is commodity based, hence not impacted.

Other limitations of Trade Statistics

- E-Commerce is trading in products or services using computer networks.
- Examples are: Flipkart, Amazon, etc
- Exports/transactions are taking the e-commerce route worldwide. Transactions through e-commerce will not be covered under mercantile trade. However, data on these transactions will come under non-customs data source and Government of India is working to capture the data.

National & State Budgets

- India is a Federal Country having 29 States & 7 Union Territories (administered by Union of India)
- Union of India has a Union budget & each State has a State Budget
- The budgets show allocation for Agriculture, Fertilizers, Irrigation
- Dual counting for Centrally sponsored schemes to be avoided as States have to indicate central share of funds in their budget.

MSP

- Commission of Agricultural Costs & Prices (CACP) determines Minimum Support Price (MSP) for 21 food crops & 4 other crops
- Commission takes into account the cost of production, overall demand-supply, domestic & international prices, inter crop price parity, affect of price policy on economy etc.
- FCI and NAFED are procurement agencies to procure notified commodities at MSP, if market price go below MSP

PSE

- The Producer Support Estimate (PSE) is an indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at farm gate level, arising from policy measures, regardless of their nature, objectives or impacts on farm production or income
- PSE is equal to **Sum of budgetary transfers + Market Price Support + Tax concessions**

AMS

- AMS is **Aggregate measurement of support used in WTO;** It is determined by calculating a market price support estimate for each commodity receiving such support, plus non-exempt direct payments or any other subsidy not exempted from reduction commitments, less specific agricultural levies or fees paid by producers
- AMS serves as a basis to monitor domestic support levels with a view to reduce trade barriers.
- It includes only domestic policies which have greatest production and trade effects.

Difference between PSE & AMS

- Both include budgetary transfers, market price support & revenue foregone.
- PSE monitors progress of agricultural policy reforms while AMS is the basis for legal commitment under WTO to reduce domestic support and thus reduce trade barriers.
- The most important difference from PSE is that price gaps in the AMS calculation are estimated by reference to domestic administered prices and not to actual producer prices, and that external reference prices are fixed at the average levels of the 1986-1988 base period. In addition, many budgetary transfers included in PSEs are excluded from the AMS.

Thank You

四、馬來西亞專家簡報

Quantifying Policy Measures Using the PSE: data issues and challenges - Malaysia

1

Major Issue No. 1
Digging and uncovering required data at institutions

Institutions covering agriculture:

- Ministry of Agriculture and Agro Based Industries (MOA)
  - food crops, floriculture, herbs, livestock, fisheries, "others" and agrobased
- Ministry of Plantation Industries and Commodities (MPIC)
  - oil palm, rubber, cocoa, pepper, tobacco and kenaf, timber products

2

Major Issue No 1 :
Digging and uncovering required data at institutions

Institutions covering agriculture:

- Ministry of Rural and Regional Development (KKLW)
  - smallholder development, replanting programmes. training, welfare programs including income increment and housing assistance, local community development program and others

3

Major Issue No 1 :
Digging and uncovering required data at institutions

Institutions covering agriculture:

- Ministry of Education (MOE)
  - academic education, training, research and extension
- Prime Minister's Office (PMO)
  - NKEAs and EPPs
  - FELDA

4

Major Issue No 1 :
Digging and uncovering required data at institutions

Institutions covering agriculture:

- MOA
  - DOA, DVS, FAMA, LPP, MARDI
  - Agrobank, MADA. KADA, MPIB
  - IADA :
    - *Kerian Sungai Manik
    - *Kalaka Saribas Betong
    - *Barat Laut Selangor
    - *Ketara; Kemasin-Semerak
    - *Seberang Perak

5

Major Issue No 1 :
Digging and uncovering required data at institutions

Institutions covering agriculture:

- MPIC
  - MPOB, MPOC
  - MCB, NKTB, MPB
  - MRB, MREPC

6

Major Issue No 1 : Digging and uncovering required data at institutions

Institutions covering agriculture:

- KKLW
  - RISDA
  - FELCRA
  - INFRA
  - JAKOA
  - KEJORA
  - KE TENGAH
  - MARA

7

Major Issue No 1 : Digging and uncovering required data at institutions

Institutions covering agriculture:

- Ministry of Education (MOE)
  - 20 public universities
- Prime Minister's Office (PMO)
  - NKEAs and EPPs
  - FELDA and Felda Global Ventures

8

Major Issue No 1 : Digging and uncovering required data at institutions

Institutions covering agriculture:

- Ministry of Education (MOE)
  - 20 public universities
- Prime Minister's Office (PMO)
  - NKEAs and EPPs
  - FELDA and Felda Global Ventures

9

Major Issue No. 2 2° data reliability and availability for selected commodities

- Standard commodities:
  - Rice, sugarcane, poultry, pig meat, beef and milk wheat, maize and oilseeds

(of the above ~~sugarcane~~, wheat, maize and oilseeds not produced in MY)

- Specific commodities:

Oil palm, rubber, ~~cocoa~~, pineapple and ~~mango~~ papaya

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Major Issue No. 2 2° data reliability and availability for selected commodities

Commodity	✓	✗
Rice	✓ ✗	
Rubber	✓	
Oil palm	✓	
Pineapple		✗
Papaya		✗
Poultry		✓ ✗
Beef		✓ ✗
Pig meat		✗
Milk		✗

Comment [ta-011]: Rice Quality issue imported price can be a "secret"

Comment [ta-012]: Isolation between fresh and for processed

Comment [ta-013]: Different varieties imported and exported locally produced

Comment [ta-014]: Different parts allowed for imports; meat only allowed for processing

Comment [ta-015]: Big quality differences between beef types

Comment [ta-016]: imported parts allowed different from ones produced

Comment [ta-017]: Substantial "form and quality" differences

11

Major Issue No. 3 :Time and Budget

- Only 5 months allocated for country to produce PSE table for e.g. 10 commodities

⇒ 15 days/commodity!!

⇒ need quite a bit of staff assistance

12

五、斯里蘭卡專家簡報

Data Availability and Possible Difficulties in Measurement of PSE,CES,GSSE Sri Lanka

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Sri Lanka

Out line of the Presentation

- Required Data /information to estimate PSE/CSE/GSSE
- Data Avainability
- Possible Difficulties

Required Data/Information to Estimate PSE

- PSE ; an accounting of the annual monetory value of the support (gross transfer from consumer and taxpayers to producers) measured at farm gate level arising from policy measures which can be grouped as
- Budgetory transfer - **Fertlizer subsidy** , subsidy for replanting in case of plantation crops
- Market price support(MPS) –**tariff level**
- Revenue forgone- **consession credit/ Tariff concession for agricultur machinary**

Required Data/Information to Estimate CSE

- CSE ; the annual monetory value of gross transfer from (to) consumer measured at farm gate level arising from policy measures .
- **Transfer from producer to consumer (MPS)**
  no consumtion subsidy
  samurdi program tageted for poor ?

Required Data/Information to Estimate GSSE

- GSSE ; the annual monetory value of gross transfer to general services provided to agriculture producers collectively . **From budgetary allocation and from other sources for R&D and Extension etc**

Required Data/Information and avaialability to Estimate PSSE/CSE/GSSE

- Commodity to be covered
- Rice
- Maize
- Sugar
- Poultry
- Milk
- Chilli
- Onion
- Potato

Required Data/Information and their avaialability to Estimate PSSE/CSE/GSSE

- Gross value of production/production/farmgate price/exchange rate /GDP deflater/tarif lelel

Available in Annual Report of Central bank/ price data from department of census and statistics/ custem report and circular

Required Data/Information and their avaialability to Estimate PSSE/CSE/GSSE

- Budgetary transfer – expenditure on fetilizer subsidy
- expenditure on fixed capital formation
- Available in annual report of national planining/tressary/

Possible difficulties

Average of prices/ exchange rate/

Change of tariff level within a year

Boader price

Recent Key Policy Meassures

- **Other field crop sector**
- Farmers who cultivate green gram, kurakkan, maize etc., were encouraged to cultivate a new cultivation season during the period August to October outside the traditional cultivation cycle.
- Special attention was given to increase the cultivated extent of supplementary field crops such as big onion, red onion, maize, green gram,groundnut, gingelly, cowpea, soya bean, chili, finger millet and black gram with a view to reaching self sufficiency by 2016.

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Thank You