REPORT
OF THE SUB-COMMITTEE
ON AGRICULTURE AND ALLIED SECTORS

GOVERNMENT OF INDIA
CENTRAL STATISTICS OFFICE
Ministry of Statistics and Programme Implementation
NEW DELHI
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Indira Gandhi Institute of Development Research (IGIDR)

(An Advanced Research Institute established in 1987 by Reserve Bank of India and a Deemed University.)

Silver Jubilee Year
(2012-2013)

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NO. U-11014/1/DDG/Agri. Com./2013-NAD-3 18-07-2014

Dr. T C A Anant,
Secretary & CSI,
Ministry of Statistics and Programme Implementation,
Fourth Floor, Sardar Patel Bhavan,
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Dear Dr. Anant,

I submit along with this the Report of the **Sub-Committee on Agriculture and Allied Sectors** constituted by the National Accounts Division of CSO, MOSPI under my Chairmanship.

I would be grateful for the examination of this Report by the Ministry and implementation of the recommendations.

With warm regards,

Yours sincerely,

S. Mahendra Dev

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Acknowledgements

The Ministry of Statistics and Programme Implementation asked me to Chair the "Sub-Committee on Agriculture and Allied Sectors", to review the issues relating to compilation of Gross Domestic Products and other key Macro-Economic indicators in Agriculture and Allied Sectors and recommend suitable improvements. I accepted the responsibility in view of the importance of the Sector in the Indian Economy and my interest and involvement with the subject matter.

My special thanks are due to Dr. S Durai Raju, DDG (NAD) CSO for his enthusiasm, involvement and active participation in the Committee and working efficiently to give the final shape to this Report. Also I thank all the officers and staff of Agriculture Unit of NAD, CSO for providing necessary logistical support.

We held two formal meetings and many informal discussions. We had meaningful presentations by the data producers from all segments of the Agriculture and Allied sectors and fruitful discussions on various issues.

I would like to express my sincere gratitude to all the Members of the Sub-Committee for their active participation and keen interests. Also I thank the Special Invitees for making presentations on their subject domain and providing valuable inputs on the subject matters. Finally I thank the CSO and the staff of the NSC for providing logistical support.

S. Mahendra Dev

List of Abbreviations

AIDIS	All India Debt and Investment Survey
AoA	Agreement on Agriculture
API	Agricultural Prices in India
APMC	Agricultural Produce Marketing Board
BoP	Balance of Payments
BOPSY	Balance of Payments Statistics Yearbook
BPM6	The sixth edition of the Balance of Payments and International Investment
C/SPCB	Central /State Pollution Control Board
CAAA	Controller of Aid Accounts and Audit
CCE	Crop Cutting Experiments
CCS	Cost of Cultivation Studies
CEA	Central Electricity Authority
CEPA	Comprehensive Economic Partnership Agreement
CGWB	Central Ground Water Board
CSO	Central Statistics Office
CMFRI	Central Marine Fisheries Research Institute
CIFRI	Central Inland Fisheries Research Institute
CBD	Convention on Biological Diversity
DAHD	Department of Animal Husbandry, Dairying & Fisheries
DTRs	Daily Trade Returns
DES	Directorate of Economics & Statistics
DESMOA	Directorate of Economics and Statistics, Ministry of Agriculture
DMI	Directorate of Marketing Intelligence
EARAS	Establishment of an Agency for Reporting Agricultural Statistics
EBOPS	Extended Balance of Payments Services
ECBs	External Commercial Borrowings
EDI	Electronic Data Interchange
EDMU	External Debt Management Unit
EFTA	European Free Trade Association

FAI	Fertilizer Association of India
FAO	Food and Agriculture Organization
FAOSTAT	Food & Agricultural Organization Statistics
FHP	Farm Harvest Prices
FOD	Field Operations Division
FSI	Forest Survey of India
FTA	Free Trade Agreements
GCES	General Crop Estimation Survey
GDP	Gross Domestic Product
GOI	Government of India
GVO	Gross Value of Output
IASRI	Indian Agricultural Statistics Research Institute
IC	Intermediate Consumption
ICAR	Indian Council of Agricultural Research
ICS	Improvement of Crop Statistics
IIP	International Investment Position
ILC	Indian Livestock Census
IMD	Indian Meteorological Department
IMF	International Monetary Fund
IMTS	International Merchandise Trade Statistics
INDG	Indigenious
IOTT	Input Output Transactions Tables
ISRO	Indian Space Research Organization
ISS	Integrated Sample Survey
LUS	Land Use Statistics
MAP	Medicinal and Aromatic Plants
MoA	Ministry of Agriculture
MOSPI	Ministry of Statistics and Programme Implementation
MOWR	Ministry of Water Resources
NAD	National Accounts Division

NAFTA	North American Free Trade Agreement
NBSS	National Bureau of Soil Survey & Land use Planning
NFH	National Family Heath Survey
NHB	National Horticulture Board
NHM	National Horticulture Mission
NSSO	National Sample Survey Office
NTFP	Non Timber Forest Products
N/C	Not Calved
OECD	Organization of Economic Cooperation and Development
QR	Quota Restrictions
RPA	Rupee Payment Area
RTP	Reserve Tranche Position
SAFTA	South Asian Free Trade Agreement
SASA	Agricultural Statistics Authorities (SASAs)
SAU	State Agricultural Universities
SDRs	Special Drawing Rights
SDT	Special and Differential Treatment
SEZs	Special Economic Zones
SFD	State Forest Departments
SME	Small and Medium Enterprises
SNA	System of National Accounts
SRR	Seed Replacement Ratio
TCD	Technical Committee of Direction
TOF	Trees Outside Forests
TTR	Total Trade Restrictions
WPI	Wholesale Price Index
WTO	World Trade Organization
Y/S	Young Stock

CHAPTER-1

Introduction:

In India, the Agricultural Statistics System is very comprehensive and provides data on a wide range of topics such as crop area and production, land use, irrigation, land holdings, agricultural prices and market intelligence, livestock, fisheries, forestry, etc. It has been subjected to review several times so far so as to make it adaptive to contemporary changes in agricultural practices. India has a well-established and internationally known Agricultural Statistical System. It is a decentralized system with the State Governments. State Agricultural Statistics Authorities (SASAs) play a major role in the collection and compilation of Agricultural Statistics at the State level. Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) at the Centre is the nodal agency for Agricultural Statistics at the National level.

Agriculture is the mainstay of the Indian economy because of its high share in employment and livelihood creation. It supports more than half a billion people by providing employment to 52 per cent of the workforce. Its contribution to the nation's GDP was at 13.9 per cent in 2013-14(AE). It is also an important source of raw material and demand for many industrial products, particularly fertilizers, pesticides, agricultural implements and a variety of consumer goods. Percentage share of GDP from the Agriculture and Allied Sectors to the overall GDP of the economy at constant price(2004-05) along with growth rates are given below.

GDP of the overall economy, GDP from Agriculture and Allied Sectors, Growth Rate (GR) of the overall GDP and also Agriculture & Allied Sectors at Constant Prices are given in the following table. It may be seen whenever higher growth rates achieved in Agriculture sector, the GR of the overall economy is also higher except one or two years. Share of Agriculture and Allied Activities is declining consistently since 2004-05 from 19% to 13.9% in the year 2012-13.

Year	Economy of Country		Agriculture & Allied Activities	
	GDP (in Rs. Cr.)	Growth Rate	GDP (in Rs. Cr.)	Growth Rate
2004-05	2971464		565426	
2005-06	3253073	9.5	594487	5.1
2006-07	3564364	9.6	619190	4.2
2007-08	3896636	9.3	655080	5.8
2008-09	4158676	6.7	655689	0.1
2009-10	4516071	8.6	660987	0.8
2010-11	4918533	8.9	717814	8.6
2011-12 (2nd RE)	5247530	6.7	753832	5.0
2012-13 (1st RE)	5482111	4.5	764510	1.4
2013-14 (AE)	5748564	4.9	799996	4.6

RE-Revised Estimate
AE- Advance Estimate

Share of Agriculture & Allied Activities in the GDP of Country

Year	GDP (in Rs. Crore)	GDP (Agri. & Allied) (in Rs. Crore)	Share of Agri. & Allied to total GDP(in %)
2004-05	2971464	565426	19.0
2005-06	3253073	594487	18.3
2006-07	3564364	619190	17.4
2007-08	3896636	655080	16.8
2008-09	4158676	655689	15.8
2009-10	4516071	660987	14.6
2010-11	4918533	717814	14.6
2011-12 (2nd RE)	5247530	753832	14.4
2012-13 (1st RE)	5482111	764510	13.9
2013-14 (AE)	5748564	799996	13.9

RE-Revised Estimate
AE- Advance Estimate

Crop and Land use Statistics

Crop and Land Use Statistics (LUS) are basic elements of the Agricultural Statistics System. India has been a pioneer in terms of providing crop and Land Use Statistics (LUS) though, of late, there has been significant deterioration in the quality of these Statistics. In India, most part of country has detailed cadastral survey maps, regularly updated land records and the institution of a permanent village reporting agency, and thus, has all the necessary means to produce consistent, unbiased and

on time Statistics. The production of Area Statistics is related with the quality of land records, which is poor. Quality improvement maintaining credibility are still under control provided attempts are made immediately before these become out of control.

Agricultural Statistics System in India is decentralized, both horizontally and vertically. Primary statistics are collected by the State governments (provincial or sub-national) and consolidated for the country as a whole by the Directorate of Economics & Statistics (DES), under the Department of Agriculture & Cooperation, Union Ministry of Agriculture. This system, which has evolved over the course of time, provides various sets of statistics, data, indices and indicators. Agricultural statistics are also generated through various surveys and statistical operations conducted by different institutions and government departments. The DES is the nodal agency for compiling, documenting and disseminating the basic data and the key indicators at the national level.

CROP PRODUCTION

Estimates of crop production are obtained by multiplying the area under crop and the yield rate. The yield rate estimates are based on scientifically designed crop cutting experiments conducted under the General Crop Estimation Survey (GCES). The GCES covers around 68 crops in 22 States and 4 Union Territories. The number of experiments and their distribution over the strata are made in a manner to be able to obtain the yield rate estimates with a fair degree of precision at the level of the State and each major crop-growing district. The field staff is periodically trained in the conduct of crop cutting experiments.

The Improvement of Crop Statistics (ICS) scheme carries out a quality check on the field operations of GCES under which around 30,000 experiments are supervised by the ICS staff at the harvesting stage, fifty percent by staff of the Field Operations Division (FOD) of NSSO and the remaining 50 percent by the staff of the SASA. Due to the over burden of work of patwari, quality of data remains the main concern.

The production is obtained by multiplying the area under the crop and the yield rate obtained through crop cutting experiments. The value of ouput is obtained by multiplying the production and the respective weighted average price of the commodity. Though the factors like Area, Yield Rate and the Farm-Harvest Price look simple for arithmetic operation, but reliability, timely availability and crop coverage are some of the main concern need to be addressed. **There has been large scale errors in area enumeration and crop cutting experiments. Prof. Vaidyanathan Committee dealt the subject in great details. This Committee is fully endorsing the views and the recommendations for imbibing professional approach for data collection and processing of Agricultural Statistics.**

Periodical Review of the Agricultural Statistics System:

The Agricultural Statistical System has been subjected to review several times since independence so as to make it adaptive to contemporary changes in agricultural practices. Some of the important expert groups were: (a) the Technical Committee on Coordination of Agricultural Statistics (1949), (b) the National Commission on Agriculture (1976), (c) the High Level Evaluation Committee (1983) (d) the Workshop on Modernisation of the Statistical System (1998) (e) National Statistical Commission (2001) (f) more recently the Experts Group on Agricultural Statistics under the Chairmanship of Prof A Vaidyanathan (2010) and (g) Professional Committee on Agriculture and Allied Sectors under the chairmanship of Prof Y K Alagh in 2013. Though these committees mainly focused on policy issues like reilability, timeliness and professionalism to collect, produce and disseminate quality Agricultural Statistics, none of the Committee dealt with the compilation of National Accounts Statistics in respect of Agriculture and Allied Sectors, its data requirements, issues thereof and improvements. Further, Base year revision for the National Acconuts Statistics is underway and hence a need for constituition of a professional committee was felt by the Ministry of Statistics and Programme Implementation (MOSPI).

Constitution of the Sub-Committee:

In view of the above, keeping base year revision process into account, the Ministry of Statistics and Programme Implementation(MOSPI) constituted a Sub-Committee on Agriculture and Allied Sectors under the Chairmanship of Prof. Mahendra Dev with the following ToR:

Terms of Reference (ToR)

- Review present system of compilation of GVA in Agriculture sector and its sub sectors including livestock, forestry, fisheries;
- Examine results of type studies carried out by the Division in this context.
- NSS survey on land holding etc. for their adoption in compilation of estimates;
- Examine availability and use of data generated from Cost of Cultivation Studies;
- Identify additional data requirement for preparation of sub-sector-wise estimates; and
- Suggest revised/update methodology for compilation of these estimates.

Proceedings of the Committee:

The first meeting of the Sub-Committee on Agriculture and Allied Sectors was held on 21st November, 2013, at Committee Room, Second Floor, Sardar Patel Bhavan, New Delhi under the Chairmanship of Prof. S. Mahendra Dev.

Various issues like timely availability of data, data collection methodology, incomplete coverage of data, non-availability of separate input data for the Livestock sector and various research studies to work out Rates & Ratios. After the detailed presentations and discussions, the decision of the first meeting of the Sub Committee is summarized below:

It was decided to include one more State(Himachal Pradesh (HP)) in the Sub-Committee as co-opted member, besides Tamil Nadu.

Data providers namely Advisor (Agriculture Statistics), Advisor(AHD), Advisor(Horticulture) and Advisor(Fishery) would be requested to make

presentations. The presentation would cover the data collection, issues thereof and uses of final output of CSO on the subject domain.

NAD would prepare and share the percentage share of GVO of various estimates within the group and overall GVO in the sector for those items where Rates and Ratios have been used.

IASRI would be requested to make the presentation on the proposed study on Horticulture Statistics to estimate production and Prices of various Horticultural Products.

NAD would make efforts to conduct Special Surveys on estimating input rates for the Fishery Sector with the involvement of CMFRI and CIFRI.

The Second meeting of the Sub-Committee on Agriculture and Allied Sectors was held on on 18th February, 2014 at Conference Room, Second Floor, Sardar Patel Bhavan, New Delhi under the Chairmanship of Prof. S. Mahendra Dev. Among other things various issues like the methodology used in compiling the production data, time frame, the revision schedule along with the validation checks related to the Crop Statistics, Horticulture Statistics, Livestock Statistics, Cost of Cultivation Studies, Agriculture Price Statistics, Fishery Statistics and Forestry statistics were presented and discussed.

Lay-out of the Report

This Report is divided into nine chapters. The Chapter-I deals with brief introduction of Agriculture and Allied Sectors, current status of the economy in terms of GDP and growth rates, contribution of Agriculture and Allied Sectors in GDP at constant price, terms of reference of the Committee, the proceedings of the Committee and the lay-out of this Report.

Chapter-II deals with Crop sector, brief description of compilation of GVA for the Crop sectors, the methodology, GVO of the Crop sector from 2004-05 series, data

availability, Rates & Ratio used in the Crop sector, Share of the crops within the group and in the GVO of Agriculture & Allied sectors. Also it deals with the Study awarded for revising the Rates & Ratio and the recommendations for the Crop sectors.

Chapter-III deals with Horticulture crops, compilation of GVA for the Horticulture crops, the methodology of data collection and the Agencies involved, GVO of the Horticulture crops for the 2004-05 series, data availability, Rates & Ratio, Share of the Horticulture crops within the Fruit and Vegetables group and in the GVO of Agriculture & Allied sectors. Also it deals with the Study awarded for revising the Rates & Ratio and the recommendations for the Horticulture Crops.

Chapter-IV deals with the compilation of GVA for the Livestock Statistics, the methodology of data collection and the Agencies involved, GVO of the Livestock products for the 2004-05 series, Data availability, Rates & Ratio, Share of the various livestock products within the group and in the GVO of Agriculture & Allied sectors. Also it deals with the Study awarded for revising the Rates & Ratio and the recommendations for the Livestock sectors.

Chapter-V deals with various Intermediate Consumption(IC) in the Fram and Livestock Sectors, the methodology of data collection and the Agencies involved, IC for the 2004-05 series, Data availability, Rates & Ratio, Share of the various input items. Also it deals with the Study awarded for revising the Rates & Ratio and the recommendations for the Input Items.

Chapter- VI deals with Fram-Harvest prices, Input costs, the methodology of Farm-Harvest Price data collection and the Agencies involved, Data availability, Rates & Ratio used. Also it deals with the Study awarded for revising the Rates & Ratio and the recommendations for the price data.

Chapter-VII deals with the compilation of GVA for the Fishery Sector, the methodology of data collection and the Agencies involved for both Marine and Inland

Fisheries, GVO of the Fishery Sector for the 2004-05 series, Data availability, Rates & Ratio, Share of the various Fishery products within the group and in the GVO of Agriculture & Allied sectors. Also it deals with the Study awarded for revising the Rates & Ratio and the recommendations for the Fishery Sector.

Chapter-VIII deals deals with the compilation of GVA for the Forestry Sector, the methodology of data collection and the Agencies involved, GVO of the Forestry Sector for the 2004-05 series, Data availability, Rates & Ratio, Share of the various Forestry products within the group and in the GVO of Agriculture & Allied sectors. Also it deals with the Study awarded for revising the Rates & Ratio and the recommendations for the Forestry Sector.

Chapter- IX deals with the summary of Recommendations followed by the Ministry's notification for the constitution of the Sub-Committee, Minutes of the Sub-Committee meetings, Data Sources & Time lag and the References.

Receommendations:

1. **This Committee is fully endorsing the views and the recommendations of the Prof. A. Vaidyanathan Committee for imbibing professional approach for data collection and processing of Agricultural Statistics through qualified team of professionals so that errors in area enumeration and crop cutting experiments are reduced to the extent possible and the requisite data are made available within a timeframe.**

2. **IASRI should be requested to conduct special study/surveys on Horticulture Statistics to estimate production, Prices and input costs for the important Horticultural crops. Since the percentage share from the Horticulture is increasing, urgent action is required to estimate the State-wise production, price and input cost for the major horticulture crops. This gains importance due to the discontinuance of the Central Sector schemes on Fruits and Vegetables with effect from this financial year(2014-15).**

3. **NAD would make efforts to conduct Special Surveys on estimating input rates for the Fishery Sector with the involvement of CMFRI and CIFRI for both Marine and Inland Fisheries including that of Cultured Fishery Sector and High valued Fishery sector.**

CHAPTER-2

GVO of Major Farm Crops

CROP PRODUCTION

Agriculture crops production estimates are obtained by multiplying the **area** under crop with **yield rate**. The yield rate estimates are based on scientifically designed Crop Cutting Experiments (CCE) conducted under the General Crop Estimation Survey (GCES). The GCES covers around 68 crops (52 food and 16 non-food) in 22 States and 4 Union Territories. The estimates are based on 5,00,000 experiment and the survey design adopted is that of a stratified three stage random sampling with *tehsil or taluka* as the stratum, a village as the first stage unit, a field growing the specified crop as the second stage unit and a plot, usually 5m x 5m, as the ultimate unit. The experiment consists of marking the plot and harvesting and weighing the produce from the plot. These weights form the basic data for yield estimation.

The number of experiments and their distribution over the strata are made in a manner to be able to obtain the yield rate estimates with a fair degree of precision at the level of the State and each major crop-growing district. The field staff is periodically trained to conduct crop cutting experiments. The Improvement of Crop Statistics (ICS) scheme carries out a quality check on the field operations of GCES under which around 30,000 experiments are supervised by the ICS staff at the harvesting stage, out of which half of the experiments are supervised by the Assistant Superintendents of the Field Operations Division (FOD) of NSSO and the remaining half by the staff of the State Agricultural Statistics Authority (SASA).

The second Componet, area is enumerated through Girdwari system. The Statistics of crop area are compiled with the help of the village revenue agency (commonly known as '*patwari*') in the temporarily settled parts of the country and by specially appointed field staff in the permanently settled States under a scheme known as "Establishment of an Agency for Reporting Agricultural Statistics (EARAS)". The States in the North-Eastern Region and two other Union Territories do not have a reporting system, though the States of Tripura and Sikkim (except some minor

pockets) are cadastrally surveyed. They compile what are called conventional crop estimates based on personal assessment of the village security-men ("chowkidars"). The three categories of States and Union Territories account for eighty-six, nine and five per cent, respectively of the total reporting area.

Estimation of GVO:

The GVO is estimated by the product of production and respective price obtained for each crops where production, and price data are made available. Weighted average price of Farm-Harvest price collected by the DESAg are being used. The prices are mostly collected under their marketing intelligence schemes. The centres selected for collection of farm-harvest prices are distributed all over the country. However, the prices supplied by the DES of States are taken for deriving GVO. The complete methodology for collection of Price data is dealt separately in Chapter-VI.

As of now Crop Statistics are available only for 41 crops. Efforts should be taken to cover all agricultural crops for bringing out Area, Yield rate, Production, Farm-Harvest Price and Input Costs so that GVO and GVA are estimated. If some of the crops are not covered annually, the same could be covered periodically say once in three years so that the GVO estimates are robust, reliable and directly computed.

The GVOs calculation, data sources, issues, percenatage share within the group and farm sectors and rates & ratios used, are illustrated groupwise in the following paragraphs. This exercise is done keeping in view to underline the importance of the crop and its contribution to the National GDP. For this exercise, data for the period from 2004-05 to 2012-13 were considered. The year 2004-05 is the base year and the year 2012-13 is the latest year for which firm data were supplied by the sources Agencies. Also, the data for analyses relates to constant price only and the Rates and Ratios used were highlighted and recommended for continuance or otherwise depending upon the situation.

GVO of CEREALS:

GVO from 2004-05 series

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Paddy	73162	78869	79936	82930	85672	78091	82539	90606	86971
Wheat	47788	47218	53948	55166	56231	55706	59209	64857	62955
Jowar	4547	4647	4453	4987	4402	4247	4357	3826	3379
Bajra	4416	3913	4534	5230	4809	3550	5583	5519	4655
Barley	712	726	826	731	1027	811	982	965	1042
Maize	7636	8295	8094	10403	10576	8935	11792	11705	11963
Ragi	1173	1152	683	1024	946	889	1057	987	816
Small Millets	**239**	**185**	**182**	**238**	**170**	**130**	**168**	**186**	**180**
Other Cereals	**94**	**62**	**68**	**25**	**32**	**104**	**68**	**39**	**37**
Cereals (GVO)	**139766**	**145068**	**152723**	**160734**	**163865**	**152462**	**165754**	**178689**	**171999**
GVO (Farm Sector)	**458498**	**484588**	**503122**	**532555**	**524972**	**524119**	**579233**	**609352**	**609126**
% Share within Group									
Small Millets	**0.17**	**0.13**	**0.12**	**0.15**	**0.10**	**0.09**	**0.10**	**0.10**	**0.10**
Other Cereals	**0.07**	**0.04**	**0.04**	**0.02**	**0.02**	**0.07**	**0.04**	**0.02**	**0.02**
% Share of GVO (Farm Sector)									
Small Millets	**0.05**	**0.04**	**0.04**	**0.04**	**0.03**	**0.02**	**0.03**	**0.03**	**0.03**
Other Cereals	**0.02**	**0.01**	**0.01**	**0.00**	**0.01**	**0.02**	**0.01**	**0.01**	**0.01**

Data on production is regularly supplied by DES, Ministry of Agriculture, Government of India for the crops namely Paddy, Wheat, Jowar, Bajra, Barley, Maize and Ragi. The percentage share of these crops within cereal group has increased from from 99.76% to is 99.88% and within farm sector has increased from 99.93 to 99.96% during the nine years starting from 2004-05 to 2012-13.

Small Millets: Production is available from the State Governments but the prices are not available. The crops viz. **Kora, Rala, Kakun, Basara, Common Millets, Banti, Baragu, Samai, Kodon, Rajgira & Sava clubbed togethrr under the category of small millets.**

Value of output of Small Millets is estimated from production multiplied by 75 percent of the weighted average price of jowar, bajra, barley, maize and ragi. The percentage share of the Small Millets within cereal group and within farm sector are too small and insignificant. The percentage contribution is 0.17% in the year 2004-05 and has come down to 0.10% in the year 2012-13. Therefore, the existing procedure would be continued.

Other Cereals: Area is Available from State DES but the Prices are not available. Value of Other Cereals is estimated from area multiplied by weighted oaverage of Value per Hectare of Jowar, Bajra, Barley, Maize, and Ragi.

The percentage share within Cereal group has come down from 0.07% in the year 2004-05 to 0.02% in the year 2012-13 and the percentage share in the Farm sector has been 0.01 to 0.02% during the period 2004-05 to 2012-13.

Since the percentage share of small millets and other cereals within cereal group and farm sector is insignificant, the existing methology would be continued.

GVO of Pulses:

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Gram	7970	8261	9569	8964	10699	10939	11592	11424	13198
Arhar	3957	4502	3804	5064	3723	3985	4764	4398	5096
Urd	2041	1947	2283	2445	1944	1986	2781	2880	3005
Moong	1829	1723	1919	2551	1803	1129	3135	2820	2162
Masoor	1820	1705	1574	1401	1711	1873	1606	1876	1748
Horse Gram	220	235	225	226	177	226	231	177	178
Moth	296	251	294	567	432	75	642	606	605
Lakh/Khesri	281	313	323	333	285	289	310	315	294
Peas/Chawali	1208	1123	815	671	833	833	805	1003	1025
Others Pulses	**624**	**568**	**600**	**617**	**700**	**802**	**928**	**665**	**644**
Pulses (GVO)	**20246**	**20627**	**21406**	**22839**	**22307**	**22137**	**26794**	**26165**	**27955**
GVO (Farm Sector)	**458498**	**484588**	**503122**	**532555**	**524972**	**524119**	**579233**	**609352**	**609126**
% Share within Group									
Others Pulses	**3.08**	**2.75**	**2.80**	**2.70**	**3.14**	**3.62**	**3.46**	**2.54**	**2.30**
% Share of GVO (Farm Sector)									
Others Pulses	**0.14**	**0.12**	**0.12**	**0.12**	**0.13**	**0.15**	**0.16**	**0.11**	**0.11**

Other Pulses: Area and Production are available from DESAg and State DES respectively but prices are not available. (Other pulses are: Ghaghra, Popat, Barbatti, Lobia, Rajma, Avare, Watana, Chaula, Cowpea, Bhatt, Wal and Other Residual).

Value of Output of Other Pulses is production multiplied by 85 percent of weighted average price of arhar, urad, moong, masoor, and horsegram. As shown in the above table, the percentage share within pulse group is ranging from 3.08% to 2.30% and the percentage share in the Farm Sector is ranging from 0.14% to 0.11% during the period from 2004-05 to 2012-13.

Unless special surveys are conducted, price data will not be available for each of these pulses and hence grouped into other pulses. Data on production is available. The same existing methodology would be continued for estimating the GVO of other

pulses. Therefore, the Committee is recommending to conduct special Surveys for these pulse crops tp estimate the average weighted price for each growing State at least once in two years.

GVO of Oil Seeds

	Value of Output at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Linseed	306	296	305	281	286	333	282	315	322
Sesamum	1845	1810	1923	2132	1705	1634	2490	2213	1642
Groundnut	11165	13403	11241	15496	10860	9058	14270	11667	7810
Rapeseed & Mustard	12047	13356	11969	9361	11722	11222	13259	11427	13221
Castor	1316	1575	1449	1703	1858	1614	2214	3708	3472
Coconut	7177	7532	7770	7418	7646	8233	8834	9432	9445
Niger Seed	200	196	192	203	190	158	175	161	169
Safflower	265	342	356	336	255	249	224	168	118
Sunflower	1894	2189	1878	2399	1815	1353	1032	878	920
Soyabean	9587	11956	12332	15052	12696	14000	17149	17335	20439
Taramira	169	45	52	14	49	54	73	38	74
Others	**81**	**86**	**103**	**99**	**84**	**165**	**279**	**191**	**230**
Oilseeds (GVO)	**46053**	**52786**	**49571**	**54495**	**49165**	**48074**	**60279**	**57534**	**57861**
GVO (Farm Sector)	**458498**	**484588**	**503122**	**532555**	**524972**	**524119**	**579233**	**609352**	**609126**
% Share within Group									
Others	**0.2**	**0.4**	**0.4**	**0.1**	**0.4**	**0.4**	**0.4**	**0.2**	**0.4**
% Share of GVO (Farm Sector)									
Others	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.03**	**0.05**	**0.03**	**0.04**

Value of Output of Other Oilseeds is Area multipied by 85 percent of weighted average value of output per hectare of linseed, castor, sesamum, niger and safflower

Unless special surveys are conducted, price data will not be avaialbale for each of these Oil Seeds grouped into others. Data on production is available. The existing methodology can be continued for estimating the GVO of *other Oil seeds.*

GVO of Sugarcane:

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Sugarcane	17379	22839	30997	30571	20014	23241	28329	30864	28553
Gur	10929	8300	5533	5968	12528	10132	8452	7504	7816
Others	**135**	**130**	**128**	**119**	**108**	**118**	**115**	**114**	**113**
Sugars (GVO)	**28443**	**31269**	**36657**	**36658**	**32650**	**33491**	**36897**	**38482**	**36481**
GVO (Farm Sector)	**458498**	**484588**	**503122**	**532555**	**524972**	**524119**	**579233**	**609352**	**609126**
% Share within Group									
Others	**0.47**	**0.42**	**0.35**	**0.32**	**0.33**	**0.35**	**0.31**	**0.30**	**0.31**
% Share of GVO (Farm Sector)									
Others	**0.03**	**0.03**	**0.03**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**

Other Sugar: (Other sugar like Palmira) Area available from DESAg and State DES but production and prices are not collected. However, value per hectare of sugarcane is estimated.

Value of output of Other Sugar is Estimated by multiplying Area by 90 percent of weighted average value of output per hectare of sugar cane and gur.

Gur: Gur is obtained as 10 percent of the cane available after providing for cane used for seeds, chewing, khandsari and by sugar factories. Percentage share of other sugar is just 0.02% and hence the same methodology would be continued. However, Ministry is making efforts to get these rates revised through special survey conducted by National Sugarcane Research Institute. Till the new rates are available, the existing one would be continued.

GVO of Fibre crops:

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Kapas	17062	18910	20809	25728	21836	22119	28071	32427	33560
Jute	1499	1568	1639	1605	1501	1768	1574	1689	1682
Sannhemp	30	34	42	36	35	23	28	27	32
Mesta	157	160	171	175	126	97	105	111	103
Others	**11**	**25**	**19**	**17**	**19**	**23**	**19**	**28**	**20**
Fibres (GVO)	**18759**	**20698**	**22680**	**27560**	**23517**	**24030**	**29798**	**34282**	**35397**
GVO (Farm Sector)	**458498**	**484588**	**503122**	**532555**	**524972**	**524119**	**579233**	**609352**	**609126**
% Share within Group									
Others	**0.06**	**0.12**	**0.08**	**0.06**	**0.08**	**0.10**	**0.07**	**0.08**	**0.06**
% Share of GVO (Farm Sector)									
Others	**0.002**	**0.005**	**0.004**	**0.003**	**0.004**	**0.004**	**0.003**	**0.005**	**0.003**

Other Fibre: Area available from DESAg and State DES but production and prices are not collected. However, value per hectare of other fibre crops are used.

Value of Output of Other Fibre is estimated by multiplying Area by 90 percent of weighted average value of output per hectare of sanhemp and mesta. The contribution of other fibre crop is too insignificant and hence the existing methodology could be continued.

GVO of Drugs & Narcotics:

	Value of Output at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Tea	3134	3258	3442	3391	3350	3419	3379	3428	3981
Coffee	2003	2002	1978	1991	2001	2236	2267	2343	2531
Tobacco	2499	2562	2211	2134	2854	3438	3656	3379	3642
Opium	58	57	45	35	68	98	134	103	74
Betel Leaves	2547	1488	1182	1181	2122	2194	2315	2370	2333
Isabgol	140	87	136	141	171	328	266	296	252
Saffron	9	15	8	9	10	8	15	17	15
Cocoa	38	13	14	17	20	19	21	28	20
Others	**3500**	**3967**	**4009**	**4805**	**4588**	**4647**	**4016**	**3606**	**3628**
Drugs & Narcotics (GVO)	**13927**	**13450**	**13026**	**13704**	**15184**	**16388**	**16069**	**15570**	**16477**
GVO (Farm Sector)	**458498**	**484588**	**503122**	**532555**	**524972**	**524119**	**579233**	**609352**	**609126**
% Share within Group									
Others	**25.1**	**29.5**	**30.8**	**35.1**	**30.2**	**28.4**	**25.0**	**23.2**	**22.0**
% Share of GVO (Farm Sector)									
Others	**0.8**	**0.8**	**0.8**	**0.9**	**0.9**	**0.9**	**0.7**	**0.6**	**0.6**

Other Drugs & Narcotics(including Medicinal Plants & Toddy): Area available from DESAg and State DES but prices and production are not collected.

Value of Output of Other Drugs & Narcotics is estimated by multiplying Area by 90 percent of weighted average value of output per hectare of opium in case of M.P.& Rajasthan(these two states are Opium producing states), For Tobacco producing States, 90 percent of weighted average value per hectare of tobacco leaves and tobacco stems

Toddy: Toddy is estimated from NSSO report 61st round on Consumption of Some Important Commodities in India (2004-05) which provides monthly per capita quantity and Value of consumption for Non-Food Items for each State and UT (with rural and urban break up). The value of Toddy production is estimated by multiplying the value of Toddy consumption in rural and urban area in a State by respective rural and urban Population. Value of Output of Toddy is estimated at constant price multiplied by WPI growth of Non-Food items. Till new NSSO survey results are made available, the present methodology would be continued.

GVO of Condiments & Spices:

	Value of Output at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Cardamom	365	387	350	325	370	336	348	433	448
Chillies	4506	3899	4378	4772	5122	5599	5208	6535	6180
Black Pepper	574	670	527	384	356	404	470	430	424
Dry Ginger	1461	1865	1624	1480	1582	2334	2727	2471	2059
Turmeric	1971	2387	2177	2509	2353	2638	3150	3880	2769
Arecanut	2567	2725	2645	2731	2858	2908	3769	3037	2622
Garlic	1203	1520	1689	2267	2037	1813	1952	2686	2487
Coriander	537	494	540	643	919	937	817	971	965
Fennel	152	134	168	150	80	80	173	392	208
Cumin	1001	1028	863	1340	1084	1262	1793	2790	2929
Ajwain	18	10	27	31	47	17	39	56	27
Methi	74	45	85	86	115	105	142	134	114
Tamarind	467	466	460	452	464	469	461	446	456
Nutmeg	17	18	72	71	72	72	91	92	94
Cloves	2	2	2	3	2	3	3	2	3
Others	**916**	**901**	**1089**	**1141**	**881**	**919**	**1041**	**1043**	**1024**
Condiments & Spices (GVO)	**15829**	**16551**	**16696**	**18384**	**18342**	**19896**	**22184**	**25398**	**22812**
GVO (Farm Sector)	**458498**	**484588**	**503122**	**532555**	**524972**	**524119**	**579233**	**609352**	**609126**
% Share within Group									
Others	**5.8**	**5.4**	**6.5**	**6.2**	**4.8**	**4.6**	**4.7**	**4.1**	**4.5**
% Share of GVO (Farm Sector)									
Others	**0.20**	**0.19**	**0.22**	**0.21**	**0.17**	**0.18**	**0.18**	**0.17**	**0.17**

Other Condiments & Spices: Area available from DESAg and State DES but prices and production are not collected.

Value of Output of Other condiments & spices is estimated by multiplying Area with 90 percent of weighted average value of output per hectare of cardamom, dry chillies, dry ginger and black pepper. The contribution of other Condiments & Spices crop in the Farm sector is insignificant and hence the existing methodology would be continued.

GVO of Miscellaneous crops:

	Value of Output at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Rubber	3871	4133	4382	4264	4475	4279	4440	4629	4638
Guar Seed	867	1326	1396	2297	2438	715	1829	2765	3103
Mulbery	35	35	46	43	42	40	31	36	31
Mashroom	236	252	260	258	262	318	302	304	303
Fodder	16800	15757	15295	14813	14135	13968	14822	14612	14731
Grass	6590	6382	6403	6371	6384	6382	6355	6379	6361
Misc. Food Crops	16	17	19	19	19	13	19	18	18
Misc. Non-Food Crops	620	667	701	776	753	753	767	757	758
Other Crops	29035	28568	28501	28840	28509	26468	28566	29500	29944
GVO (Farm Sector)	458498	484588	503122	532555	524972	524119	579233	609352	609126
% Share within Group									
Fodder	57.9	55.2	53.7	51.4	49.6	52.8	51.9	49.5	49.2
Grass	22.7	22.3	22.5	22.1	22.4	24.1	22.2	21.6	21.2
Misc. Food Crops	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Misc. Non-Food Crops	2.1	2.3	2.5	2.7	2.6	2.8	2.7	2.6	2.5
% Share of GVO (Farm Sector)									
Fodder	3.7	3.3	3.0	2.8	2.7	2.7	2.6	2.4	2.4
Grass	1.4	1.3	1.3	1.2	1.2	1.2	1.1	1.0	1.0
Misc. Food Crops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Misc. Non-Food Crops	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Fodder: Estimation of Production of Fodder is Sum of irrigated area of Fodder crops multiplied by 50 tonne per hectare and unirrigated area under fodder crops multiplied by 25 tonne per hectare. Value of output of Fodder is obtained by multiplying this production with price of fodder. Percentage share of Fodder withing FARM Sector is about 2.42 in the recent past. The yield rate per hectare for both irrigated and un-irrigated as mentioned above would continue until a new study results.

Grass: Estimation of Production of Grass is Total Area(4 x area under permanent pastures and other grazing lands, area under Miscellaneous tree crops,2*culturable waste, 2 x area under fallow land and net area sown) multiplied by Fixed State-wise Yield rate based on NSS results. Value of output of Grass is obtained by multiplying this production with its price. The above methodology would continue till new NSS survey results are made available. In case new results from NSS 70th round the same could be used.

The contribution of miscellaneous food crops and non-food crops to Farm Sector are insignificant and hence the existing methodology could be continued.

GVO of By-products :

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Straw & Stalks	27580	28047	28294	28455	28388	27955	28408	28109	27013
Others	2733	2754	3045	3134	2955	2905	3174	3294	3233
By Products (GVO)	30314	30801	31339	31589	31343	30860	31581	31404	30246
GVO (Farm Sector)	458498	484588	503122	532555	524972	524119	579233	609352	609126
% Share within Group									
Others	9.02	8.94	9.72	9.92	9.43	9.41	10.05	10.49	10.69
% Share of GVO (Farm Sector)									
Others	0.60	0.57	0.61	0.59	0.56	0.55	0.55	0.54	0.53

Byproducts (Straw, Stalks, & Sticks): Value of Output is estimated by multiplying area with Value per hectare under Crops from CCS.

Baggase: Baggase obtained as a byproduct during conversion of Sugarcane into Gur as 35 % of Gur production multiplied by its prices to get the Value of Output of Baggase.

However, Ministry is making efforts to get the Bagasse rate revised through special survey conducted by National Sugarcane Research Institute. Till the new rate is available, the existing one would be continued.

GVO of Kitchen Garden:

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Kitchen Garden (GVO)	2714	2714	2683	2695	2675	2661	2667	2664	2671
GVO (Farm Sector)	458498	484588	503122	532555	524972	524119	579233	609352	609126
% Share of GVO (Farm Sector)									
Others	0.59	0.56	0.53	0.51	0.51	0.51	0.46	0.44	0.44

KG:Kitchen Garden
FS: Farm Sector

Kitchen Garden: Value of Output of Kitchen Garden is 0.21% of Net area sown multiplied by weighted average value per hectare of all fruits and Vegetables. The percentage contribution to Farm Sector GVO is just 0.44% during the last two yaers. This rate may be changed based on the results of 70th round NSS survey results or latest Agriculture Census results.

Summary of Recommendations:

- **The crop statistics are available only for 41 crops. Efforts should be taken to cover all agricultural crops for bringing out area, yield rate, production, farm-harvest price and input costs so that GVO and GVA are estimated. If some of the crops are not covered annually, the same could be covered periodically say once in three years so that the GVO estimates are robust, reliable and directly computed.**

- **Since the percentage share of small millets and other cereals within cereal group and farm sector is insignificant, the existing methology of estimation of GVO would be continued.**

- **Unless special surveys are conducted, price data will not be available for each of the pulses crop grouped under other pulses. Data on production is available. Value of Output of Other Pulses is estimated by production multiplied by 85 percent of weighted average price of arhar, urad, moong, masoor, and horsegram. The existing methodology would be continued for estimating the GVO of other pulses. Therefore, the Committee is recommending to conduct special Surveys for these pulse crops to estimate the average weighted price for each growing State at least once in two years.**

- **Unless special surveys are conducted, price data will not be avaialbale for each of these Oil Seeds grouped into others. Data on production is available. The existing methodology can be continued for estimating the GVO of *other Oil seeds.* Therefore, the Committee is recommending to conduct special Surveys for these oil seed crops to estimate the average weighted price for each growing State at least once in two years.**

- **The contribution of Other Sugar and other fibre crop groups are too insignificant and hence the existing methodology may be continued.**

- **The value of Toddy production is estimated by multiplying the value of Toddy consumption in rural and urban area in a State by respective rural and urban Population. Value of Output of Toddy is estimated at constant price multiplied by WPI growth of Non-Food items. Till new NSSO survey results are made available, the present methodology may be continued.**

- **The contribution of other Condiments & Spices crop in the Farm sector is insignificant and hence the existing methodology may be continued.**
- **The yield rate of Fodder per hectare for both irrigated and un-irrigated would may be continued until a new study results are made available.**
- **The existing methodology for the estimation of GVO from Grass would be continued till new NSS survey results are made available. In case new results from NSS 70th round is made availbel the same may be used.**

- **The contribution of miscellaneous food crops and non-food crops to Farm Sector are insignificant and hence the existing methodology for the estimation of GVO may be continued.**

- **Value of Output of Kitchen Garden is 0.21% of Net area sown multiplied by weighted average value per hectare of all fruits and Vegetables. The existing rate may be changed based on the results of 70th round NSS survey results or latest Agriculture Census results.**

- **Of late, State governments supply production data which are quite differing from the final estimates of the Ministry of Agriculture. The reason being stated is that the State Goverments revises the data even after final estimates were released by the Ministry of Agriculture, GOI. Ministry of Agriculture should be apprised of the importance of freezing of the estimates once finalized by it. No further changes should be considered.**

CHAPTER-III

Horticultural crops

'**Horticulture and allied**' sector is an integral element for food and nutritional security in the country. Horticulture is the main segment, while its various sub-segments are fruits, vegetables, aromatic and herbal plants, flowers, spices and plantation crops. All these are regarded as the essential ingredients of economic security. The wide range of agro-climatic conditions of India is conducive for growing a large variety of horticultural crops, including, root and tuber crops, mushroom, ornamental crops, plantation crops like coconut, arecanut, cashew and cocoa. Contribution of horticulture crops to GDP (Agriculture) is increasing

During the presentations, the Committee was informed that (a) No systematic and scientific efforts to collect horticulture data fully on 244 horticultural crops (b) Till recently(2005-06, NHM) Horticulture activities are not considered as significant segment of agrarian activities and hence not part of Census and Survey methodology (c) Apart from area, and production data, there is need to collect reliable data on Inputs, Prices, Imports, Storage facilities, Market facilities, exports, etc., (d) Multiple agencies involved with wide differences in their estimates and no cross validation mechanism existing.

The Agencies involved in horticulture crop statistics are:

- National Horticulture Board (NHB)
- DES in DOA&C - as part of Area and Production Estimates
- CES-F & V - Central sector plan scheme (11 States, 7 Fruits, 7 Vegetables)
- Agriculture Census- Area covered under different crops are available (operational holdings)
- Ad-hoc and bench mark surveys

Horticulture crops Group

Sl No	Horticulture crops Group	No of crops/commodities
1	Vegetable	45
2	Tuber crops	10
3	Fruits	48
4	Minor fruits	18
5	Mushrooms	8
6	Aromatic Plants	23
7	Medicinal Plants	13
8	Herbs and Foliage	11
9	Spices	27
10	Nuts	15
11	Flowers	22
12	Ornamental Plants	4
	Total	244

- Share of GVO of Horticulture Crops is increasing from 28.17% in the year 2004-05 to 32.85 in the year 2012-13.
- Fruits and Vegetables account about 82% of total horticulture production in our country
- Leading fruit producing states are Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka and Gujarat
- Leading vegetable producing states are WB, UP, Bihar, Orissa, Tamil Nadu and Gujarat

GVO of Horticulture crops and Growth Rates:

	GVO (Constant Prices)		Growth Rate		
Year	Agriculture	Fruits & Vegetables + Condiments & Spices	Agriculture	Fruits & Vegetables + Condiments & Spices	% share w.r.t. Agriculture
2004-05	458498	129171			28.17
2005-06	484588	138532	5.69	7.25	28.59
2006-07	503122	144465	3.82	4.28	28.71
2007-08	532555	153371	5.85	6.16	28.80
2008-09	524972	155685	-1.42	1.51	29.66
2009-10	524119	167521	-0.16	7.60	31.96
2010-11	579233	180800	10.52	7.93	31.21
2011-12	609352	195035	5.20	7.87	32.01
2012-13	609126	200068	-0.04	2.58	32.85

The Government of India has recognized horticulture crops as a means of diversification in agriculture in an eco-friendly manner through efficient use of land and optimum utilization of natural resources. Horticulture seeks to create ample opportunities for employment, particularly for unemployed youths and women folk. India has maintained leadership in the production of many commodities like mango, banana, acid lime, coconut, arecanut, cashew, ginger, turmeric and black pepper. Presently, it is the second largest producer of fruits and vegetables in the world.

India is next only to China in area and production of vegetables and occupies prime position in the production of cauliflower, second in onions and third in cabbage in the world. India has also made noticeable advancement in the production of flowers. Further, it is the largest producer, consumer and exporter of spices. India is home to a wide variety of spices like black pepper, cardamom (small and large), ginger, garlic, turmeric, chilli and a large variety of tree and seed spices. Almost all the States in the Country grow one or more spices. The major spice producing States are Andhra Pradesh, Tamil Nadu, Odisha and Madhya Pradesh. North Eastern region and Andaman and Nicobar Islands also have potential areas cultivated for spices, particularly organically.

Further, coconut is a versatile crop and about 10 million people depend on its cultivation, processing and related activities. It is grown mainly along the coastal

States of the country as well as in the North-Eastern region. It is grown over an area of 1.84 million hact. with a production of 8.67 million tonnes. India is a leading country in the world for coconut production.

Thus, over the years, much progress has been made for the advancement of horticulture and allied sector. Rising investments have resulted in increased production and availability of horticultural produce in the rural and urban areas. Many schemes and policies have been introduced, from time to time, for upliftment and commercialization of the sector. Large number of investors are taking advantage of the existing potentials in the sector, as well as trying to explore the untapped potential.

The two main sources of data for Horticulture crops are Crop Estimation Survey on Fruits and Vegetables by the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) and National Horticultural Board (NHB). The survey, which is still in a "pilot" stage follows a stratified three-stage random sampling design in the case of fruit crops, with village, orchard and fruit bearing tree as the sampling units at the successive stages thus the production estimates DESMOA survey are technically sound but are complex, time consuming and rather difficult to implement in practice. Further, the survey is limited to 11 States due to lack of necessary staff resources. The estimates furnished by the NHB are subjective to the reports received from the ground-level staff. There is significant difference between the results of NHB & DESMOA estimates leading to confusion. Neither NHB nor DESMOA provide estimates of production of crops such as mushroom and herbs that are of emerging commercial importance.

Plantation crops

Plantation crops in India are considered to be the main segment of the horticulture crops. They are the mainstay of agrarian economies in many States and Union Territories (UTs) of the country. They play an important role in the agricultural and industrial development of the country as a whole. They contribute a significant amount to the national exchequer and country's exports by way of excise and export

earnings. They also provide direct and indirect employment to large number of people in the country, and thus tries to supplement the poverty alleviation programmes, especially in rural sector.

Plantation crops constitute a large group of crops. The major plantation crops include coconut, arecanut, oil palm, cashew, tea, coffee and rubber; and the minor plantation crops include cocoa. India is the largest producer and consumer of cashew nuts. The total production of cashew is around 0.57 million tonnes from an area of 0.24 million hectares. India also holds number one position in arecanut production.

Tea and coffee are the main and oldest industries in the country, which provide ample employment opportunities to the people at large and holds immense potential for export. India is one of the largest tea producer in the world. Coffee is the second largest traded commodity in the world and is an extremely important foreign exchange earner. The coffee industry of India is one of the largest producer of coffee in the world.

India is the third largest producer of coconut and leads 90 coconut-producing countries of the world. The area for coconut plantation in India has been majorly distributed over 18 States and 3 UTs, under different agro-climatic conditions. India is a premier coir manufacturing country in the world. Wide range of coconut products, edible and non-edible, are available for both domestic and export market. Tender coconut water concentrate is another product, apart from soft drinks, which is manufactured and marketed successfully.

GVO of Vegetables:

India is the largest producer in the world of cashew nuts, coconuts, ginger, turmeric and black pepper. The two main sources of data for vegetable crops are Crop Estimation Survey on Fruits and Vegetables by the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) and National Horticultural Board

(NHB). The production data are supplied by NHB annually. The GVO for the vegetable crops are given in the following table.

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**04-05**
Potato	8775	9159	8531	10669	8471	12723	13137	11725	12846
Sweet Potato	801	780	814	788	810	820	766	762	789
Tapioca	2148	2258	2464	2540	2290	2076	1957	2065	1714
Onion	3593	4014	4569	4850	4085	4094	5885	5897	5719
Brinjal	6469	6948	6991	7137	7453	7611	8329	8808	9397
Cabbage	3826	3724	3730	3984	4258	4334	4751	5079	5280
Cauliflower	5342	5906	6006	6328	6722	6765	6924	7475	7972
Okra	3431	3493	3574	3662	3838	4013	4774	5340	5336
Tomato	6101	6951	7041	7220	8032	8414	10606	12105	12251
Drum Sticks	29	23	22	21	20	19	19	20	20
Green Peas	2428	2558	2744	2663	2980	3133	3648	3821	4238
Other	13046	14927	15583	16343	16086	17204	19434	18512	19768
Vegetables	55989	60741	62069	66205	65045	71206	80230	81609	85330
GVO (Farm Sector)	458498	484588	503122	532555	524972	524119	579233	609352	609126
% Share within Group									
Other	23.3	24.6	25.1	24.7	24.7	24.2	24.2	22.7	23.2
% Share of GVO (Farm Sector)									
Other	2.9	3.1	3.1	3.1	3.1	3.3	3.4	3.0	3.3

Other Vegetables: The vegetable viz. Beans, Bittergourd, Bottleguard, Capsicum, Carrot, Cucumber, Muskmellon, Raddish, Parwal, Pumpkin and Watermellon are grouped into Other Vegetables.

Production is available from NHB but prices are not available. Value of output is estimated by multiplying Production with weighted average prices of all vegetable crops for which separate data is available.

GVO of Fruits:

India accounts for 10% of the world fruit production with first rank in the production of banana and sapota. The two main sources of data for fruit crops are Crop Estimation Survey on Fruits and Vegetables by the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) and National Horticultural Board (NHB). The production for the following fruit crops are supplied by the NHB. The price data are supplied by the DES of State Governments. The GVO for the fruit crops are given in the following table.

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Banana	8456	9752	11243	11934	12364	13308	12146	13749	12860
Cashewnut	1481	1483	1521	1949	1726	2043	1968	1969	2690
Mango	14168	15171	16261	16320	16241	18145	19136	20468	22514
Grapes	2808	2951	3003	3054	2996	1408	2064	3980	4451
Papaya	2369	2467	2642	2901	3255	3442	2992	3157	3693
Apple	2535	2627	1988	2895	2734	2130	4201	2526	2521
Mosambi	2328	2426	3237	3784	3478	4271	2196	1496	3479
Lemon	1731	2056	2150	2302	2477	2171	2623	2749	2987
Orange	2498	2636	2644	2947	4060	4548	5703	5900	6583
Other Citrus Fruit	768	529	586	650	882	1083	34	451	492
Lichi	834	855	900	938	955	1057	1088	1171	1257
Pine Apple	1111	1117	1175	1043	1121	1147	1197	1268	1317
Sapota	1168	1208	1313	1350	1411	1472	1605	1591	1667
Cherry	39	43	47	47	56	58	59	62	60
Alomonds	133	148	149	111	122	125	128	43	84
Jack Fruit	818	979	983	983	935	1082	1163	1096	1013
Sub-Trophical Fruit	4	5	5	5	5	5	5	5	5
Pear	368	301	290	343	338	328	375	374	369
Walnut	781	794	844	1040	1073	1106	1172	1557	1455
Guava	1715	1650	1772	1906	2038	2861	2553	2567	3687
Other Temperarte Fruits	33	26	26	26	27	21	31	31	31
Other Fruits	6185	6328	6363	5804	7017	7118	7481	9967	8086
Fruits	52331	55552	59142	62332	65311	68929	69920	76177	81301
GVO (Farm Sector)	458498	484588	503122	532555	524972	524119	579233	609352	609126
% Share within Group									
Other Fruits	11.8	11.4	10.8	9.3	10.7	10.3	10.7	13.1	9.9
% Share of GVO (Farm Sector)									
Other Fruits	1.35	1.31	1.26	1.09	1.34	1.36	1.29	1.64	1.33

Other Fruits: Production is available from NHB but prices are not available. The fruits namely Amla, Ber, Custard Apple, Kiwi, Passion Fruit, Peach, Plum, Pomegranate, Strwberry, etc. are grouped into other fruits.

Value of output is estimated by multiplying Production with weighted average prices of all fruits for which separate data is available.

Special surveys are required to be conducted for obtaining the price data for each of these fruit crops periodically. However, the same existing methodology for the estimation of GVO would be continued for estimating the GVO of other fruit crops.

Medicinal Plants and Aromatic Plants

Globally, medicinal and aromatic plants (MAPs) constitute one of the integral parts of the biodiversity, ecosystem and biological heritage. Medicinal and aromatic plants are being used since ancient time for the treatment of many diseases in traditional and recognized systems of healthcare and for therapeutic, fragrance and flavoring products in pharmaceutical and cosmetic industries besides as sources of natural dye, fats and oil, essential oil, biopesticide, carbohydrate, resins, protein, vitamins, condiment, spices, timber, fiber and other useful substances. Plants are also considered to be the prime source of drug and aroma molecules and their precursors in modern medicine.

India is one of the twelve mega-diversity countries in the world and extremely rich in biological diversity with high level of endemism. Out of 34 biodiversity hotspots-earth's biologically richest place- India houses the major parts of three important biodiversity hotspots namely Himalayas, Western Ghat and Indo-Burma with about 45000-50000 plant species and 4,900 endemic species of flowering plants. Thus we have tremendous opportunities to convert them into the useful bio-resources by adopting sustainable collection, characterization, documentation, conservation and utilization for the food, environmental and health securities through strategic participatory research, developmental and promotional approaches to deliver the end products to the society for their utilization. Loss of biodiversity is a global phenomenon. More than one decade after the implementation of the Convention on Biological Diversity (CBD), the recognition of biodiversity loss has gained lot of attention at global, national and regional levels. The United Nations proclaimed '2010' as the International Year of Biodiversity and people all over the world are working to safeguard this irreplaceable natural wealth and reduce biodiversity loss.

Medicinal and aromatic plants (MAPs) are produced and offered in a wide variety of products, from crude materials to processed and packaged products like pharmaceuticals, herbal remedies, teas, spirits, cosmetics, sweets, dietary supplements, varnishes and insecticides. The use of botanical raw material is in many cases much cheaper than using alternative. An estimated number of 70,000

plant species are used in folk medicine, a figure that has recently been confirmed by recent research. As a consequence, there is an enormous demand in botanicals – for domestic use and for commercial trade –resulting in a huge trade on local, regional, national and international level. As the production of botanicals still relies to a large degree on wild-collection, profound knowledge of trade, size, structure and streams as well as of commodities, traded quantities and their origin is essential for assessing its impact on the plant populations concerned.

India should focus on aspects associated with the international trade in medicinal and aromatic plant material, in particular on aspects of trade streams, trade structure, trade volumes and trade values.

Summary of Recommendations

- **There should be systematic and scientific efforts to collect horticulture data fully on 244 horticultural crops including production, yield rate, area, input costs and related details.**

- **Due to raising share in GVO of Horticulture Sector, Horticulture activities may be considered as significant segment of agrarian activities and hence should be brought part of Agriculture Census and Surveys**

- **Apart from area, and production data, there is need to collect reliable data on Inputs, Prices, Imports, Storage facilities, Market facilities, exports, etc.,**

- **Multiple agencies involved with wide differences in their estimates and no cross validation mechanism existing. There should be nodal agency in the Ministry of Agriculture to consolidate the data on production, area, yield rate, input costs, etc. both at state level and at National level.**

- **Value of output of Other-Vegetables is estimated by multiplying Production with weighted average prices of all vegetable crops for which separate data is available for estimating the GVO of Other Vegetables(Beans, Bittergourd, Bottleguard, Capsicum, Carrot, Cucumber, Muskmellon, Raddish, Parwal, Pumpkin and Watermellon). There should be nation wide survey to estimate average price of these vegetable crops at state level. Till then, the existing methodology may be continued.**

- **Value of output for Other Fruits(Amla, Ber, Custard Apple, Kiwi, Passion Fruit, Peach, Plum, Pomegranate, Strwberry, etc.) is estimated by multiplying Production with weighted average prices of all fruits for which separate data is available. There should be nation wide survey to estimate average price of these fruit crops at state level. Till then, the existing methodology may be continued.**

CHAPTER-IV

Livestock Statistics

Department of Animal Husbandry, Dairying & Fisheries (DAHD), under the Ministry of Agriculture is responsible for matters relating to livestock production, preservation, protection and improvement of stocks, dairy development and also for matters relating to the Delhi Milk Scheme and the National Dairy Development Board. It also looks after all matters pertaining to fishing and fisheries, which includes inland and marine sectors and matters related to the National Fisheries Development Board.

The Department has been providing assistance to the State Governments for the control of animal diseases, scientific management and up gradation of genetic resources, increasing availability of nutritious feed and fodder, sustainable development of processing and marketing facilities and enhancement of production and profitability of livestock and fisheries enterprises. State Governments have set up separate departments which are responsible for development of animal husbandry and dairying in the State.

Central Statistics Office (CSO) has been using the production data only in respect of Milk, Meat, Egg and Wool received from Department of Animal Husbandry (ISS) and data for remaining items of livestock sector, the department is solely dependent on the state agencies. Authentication of data has been always a problem. GDP from this sector since 2004-05 is given in the table below:

	GDP (Constant Prices)			Growth Rate			% Share of Livestock w.r.t.	
Year	GDP	GDP(A&AS)	Livestock	GDP	GDP(A&AS)	Livestock	GDP	GDP(A&AS)
2004-05	2971464	565426	119333				4.02	21.10
2005-06	3253073	594487	126765	9.48	5.14	6.23	3.90	21.32
2006-07	3564364	619190	133338	9.57	4.16	5.19	3.74	21.53
2007-08	3896636	655080	141398	9.32	5.80	6.04	3.63	21.58
2008-09	4158676	655689	153219	6.72	0.09	8.36	3.68	23.37
2009-10	4516071	660987	161382	8.59	0.81	5.33	3.57	24.42
2010-11	4918533	717814	171554	8.91	8.60	6.30	3.49	23.90
2011-12	5247530	753832	181687	6.69	5.02	5.91	3.46	24.10
2012-13	5482111	764511	189645	4.47	1.42	4.38	3.46	24.81

GDP- Overall All India GDP

GDP (A&AS)-GDP from the Agriculture & Allied Sectors

In the preparation of Estimation of Value of Output for Livestock Sector, data collected and supplied by the Department of Animal Husbandry under Integrated Sample Survey (ISS) do not have sufficient coverage. ISS does not include Unregistered Sector for meat and animals slaughtered, Meat Product (Heads and Legs, Fats from Slaughtered and Fallen Animals) and Meat By-product (Hides and Skins), Camel and Sheep Milk, Duck Egg for all the states, Goat Hair, Camel Hair and Pig Bristles, inputs of livestock sector i.e. Feed of Livestock, Market Charges and Operational Cost. These are either obtained from State Governments or derived using Rates and Ratios.

Milk

Dairying has become an important secondary source of income and employment for millions of rural families. The Indian Dairy Industry achieved an annual output of 97.1 million tonnes of milk in 2005-06 and 138 million tonnes (provisional) in 2013-14. Most of the milk is produced by small, marginal farmers and landless labourers who are grouped into cooperatives at the village level. Data is collected and supplied by DAHD. Milk has the largest share in the GVO of Livestock sectors ranging from 68.8 % in 2004-05 to 66.5% in the year 2012-13 as given in the following table.

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Milk	123907	129729	133900	138643	147832	153280	160530	168431	174198
Total	180034	187779	195850	204454	217641	226676	240166	251831	261771
% Share of Milk									
Share	**68.8**	**69.1**	**68.4**	**67.8**	**67.9**	**67.6**	**66.8**	**66.9**	**66.5**

Cattle Meat:

Meat Group Consists of Meat (Cattle, Buffalo, Sheep, Goat, Pig and Glands), Poultry Meat, Meat product (heads, Legs and Fat), Meat by-product (hides, skin and other byproducts).The information on meat is provided by DADF, M/o Agriculture, Govt. of India and Prices are made available by State DES.

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Cattle Meat	1470	1443	1483	1510	985	908	1157	1166	1312
Buffalo Meat	1286	1264	1362	1501	1842	2032	2551	2839	3079
Goat Meat	6866	6993	7190	8006	8174	8498	9012	9503	9862
Sheep Meat	2631	2647	2742	3067	3245	3572	3877	4155	4504
Pig Meat	1556	1649	1767	1737	1865	1820	1889	1976	1920
Glands	687	719	719	790	821	869	898	963	1015
Meat	**14496**	**14715**	**15264**	**16611**	**16931**	**17698**	**19383**	**20601**	**21693**
Total	**180034**	**187779**	**195850**	**204454**	**217641**	**226676**	**240166**	**251831**	**261771**
% Share within Group									
Cattle Meat	10.1	9.8	9.7	9.1	5.8	5.1	6.0	5.7	6.0
Buffalo Meat	8.9	8.6	8.9	9.0	10.9	11.5	13.2	13.8	14.2
Goat Meat	47.4	47.5	47.1	48.2	48.3	48.0	46.5	46.1	45.5
Sheep Meat	18.1	18.0	18.0	18.5	19.2	20.2	20.0	20.2	20.8
Pig Meat	10.7	11.2	11.6	10.5	11.0	10.3	9.7	9.6	8.9
Glands	4.7	4.9	4.7	4.8	4.8	4.9	4.6	4.7	4.7
% Share of GVO (Livestock Sector)									
Cattle Meat	0.8	0.8	0.8	0.7	0.5	0.4	0.5	0.5	0.5
Buffalo Meat	0.7	0.7	0.7	0.7	0.8	0.9	1.1	1.1	1.2
Goat Meat	3.8	3.7	3.7	3.9	3.8	3.7	3.8	3.8	3.8
Sheep Meat	1.5	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.7
Pig Meat	0.9	0.9	0.9	0.8	0.9	0.8	0.8	0.8	0.7
Glands	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

Poultry Meat

Poultry meat is estimated on the basis of Number of Chickens & Ducklings killed where Number of Chickens & Ducklings killed equals difference of 1. Sum of Chickens & Ducklings Survived (1/3rd of the No. of Eggs Hatched), 50% of Hens & Cocks population, 50% of Ducks & Drakes population, Population of Chickens & Ducklings and 62.5% of other poultry and 2. Total poultry for the next year. The number of birds from Other Poultry used for poultry Meat is taken as 37.5% of Total other poultry population. The information on price is supplied by State DES

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Adult Fowls Killed	1016	1020	1034	1057	1524	1701	1898	2134	2417
Adult Duckskilled	83	80	81	82	87	92	98	107	119
Chickens Killed	11005	11318	12748	13281	14120	14790	16874	17185	17754
Other Poultry Killed	14	14	15	17	10	11	12	14	16
Poultry Meat	**12118**	**12432**	**13878**	**14437**	**15741**	**16593**	**18882**	**19440**	**20306**
Total	**180034**	**187779**	**195850**	**204454**	**217641**	**226676**	**240166**	**251831**	**261771**
% Share within Group									
Adult Fowls Killed	**8.4**	**8.2**	**7.5**	**7.3**	**9.7**	**10.3**	**10.1**	**11.0**	**11.9**
Adult Duckskilled	**0.7**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.5**	**0.6**	**0.6**
Chickens Killed	**90.8**	**91.0**	**91.9**	**92.0**	**89.7**	**89.1**	**89.4**	**88.4**	**87.4**
Other Poultry Killed	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
% Share of GVO (Livestock Sector)									
Adult Fowls Killed	**0.6**	**0.5**	**0.5**	**0.5**	**0.7**	**0.8**	**0.8**	**0.8**	**0.9**
Adult Duckskilled	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Chickens Killed	**6.1**	**6.0**	**6.5**	**6.5**	**6.5**	**6.5**	**7.0**	**6.8**	**6.8**
Other Poultry Killed	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

The various rates and ratios used in Meat group are based on DMI studies, ISS, ILC and study conducted by NAD, CSO for rates & ratios. Following table represents various items under Meat group and its Share in Total GVO of Livestock:

Meat Products and By-Products

The production of Heads & Legs is worked out by multiplying the number of slaughtered animals supplied by TCD with the respective yield rates. There are different yield rates for Heads and Legs as well as for different animals (as shown in the table below). To obtain the value the production is multiplied with the prices received from State DES. The yield rate for head for Cattle, Buffalo, Goat, Sheep and Pig are 5.89 Kg., 7.31Kg., 0.79 Kg.,0.81 Kg. and 3.48 Kg. respectively. The yield rate for Leg for Cattle, Buffalo, Goat, Sheep and Pig are 4.89 Kg., 6.09 Kg., 0.45 Kg.,0.54 Kg. and 1.04 Kg. respectively.

Value of Output at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Heads & Legs	639	661	671	748	757	799	824	877	908
Fats From Sl.Animals	411	440	454	485	501	531	548	589	615
Fats From Fal.Animals	29	27	28	28	29	30	31	31	32
Meat Product	**1079**	**1129**	**1153**	**1261**	**1288**	**1359**	**1403**	**1498**	**1555**
By Product	**804**	**808**	**846**	**906**	**900**	**940**	**1072**	**1150**	**1226**
Cattle Hides	733	672	678	679	622	627	622	630	648
Buffalo Hides	620	600	632	682	725	769	814	878	916
Goat Skin	991	1021	1003	1186	1223	1265	1280	1319	1344
Sheep Skin	419	459	461	445	478	524	542	567	604
Hides & Skins	**2763**	**2752**	**2774**	**2993**	**3048**	**3185**	**3257**	**3395**	**3512**
Meat By-Prd.	**3566**	**3560**	**3620**	**3899**	**3949**	**4124**	**4328**	**4545**	**4738**
Meat Group	**31259**	**31837**	**33915**	**36208**	**37908**	**39774**	**43996**	**46083**	**48291**
Total	**180034**	**187779**	**195850**	**204454**	**217641**	**226676**	**240166**	**251831**	**261771**

% Share within Group									
Heads & Legs	2.0	2.1	2.0	2.1	2.0	2.0	1.9	1.9	1.9
Fats From Sl.Animals	1.3	1.4	1.3	1.3	1.3	1.3	1.2	1.3	1.3
Fats From Fal.Animals	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Meat Product	3.5	3.5	3.4	3.5	3.4	3.4	3.2	3.3	3.2
By Product	2.6	2.5	2.5	2.5	2.4	2.4	2.4	2.5	2.5
Cattle Hides	2.3	2.1	2.0	1.9	1.6	1.6	1.4	1.4	1.3
Buffalo Hides	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Goat Skin	3.2	3.2	3.0	3.3	3.2	3.2	2.9	2.9	2.8
Sheep Skin	1.3	1.4	1.4	1.2	1.3	1.3	1.2	1.2	1.3
Hides & Skins	8.8	8.6	8.2	8.3	8.0	8.0	7.4	7.4	7.3
Meat By-Prd.	11.4	11.2	10.7	10.8	10.4	10.4	9.8	9.9	9.8
% Share of GVO (Livestock Sector)									
Heads & Legs	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.3
Fats From Sl.Animals	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Fats From Fal.Animals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat Product	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
By Product	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Cattle Hides	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2
Buffalo Hides	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Goat Skin	0.6	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5
Sheep Skin	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Hides & Skins	1.5	1.5	1.4	1.5	1.4	1.4	1.4	1.3	1.3
Meat By-Prd.	2.0	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.8

Egg:

The total number of Egg is provided by DADF, M/o Agriculture, GOI. The information on price is supplied by State DES. Value of output is used is based on consumption rate, which essentially gives the ratio in which the total egg would be divided into consumption and hatching. Following table represents value of output of Egg and its Share in Total GVO of Livestock:

	Value of Output at Constant Prices (in ₹ Crore)								
Item	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13
Egg	5850	5984	6541	6855	7246	7749	7956	8424	8897
Total GVO (Livestock)	180034	187779	195850	204454	217641	226676	240166	251831	261771
% Share of GVO (Livestock Sector)									
Egg	3.3	3.2	3.3	3.4	3.3	3.4	3.3	3.4	3.4

Wool:

Wool group consists of Goat hair, Camel Hair and Pig Bristle. The production of goat hair is calculated by multiplying the State-wise projected population of Goat with corresponding State-wise fixed yield rate of goat hair/per animal. This yield rate is different for each State.

The production of camel hair is calculated by multiplying the projected population of camel with fixed yield rate of camel. Yield estimates for camel hair is 0.700 kg/ animal /year for single humped camel and double humped camel as - 3.0kg/animal/year and *based on SERC study from base year 1999-00*.

The production of Pig Bristles is calculated by multiplying the no. of slaughtered Pigs obtained from TCD data with fixed yield rate (0.155 kg/animal) of Pig Bristles and based on *SERC study from base year 1999-00*.The information on price is supplied by State DES. Following table represents value of output of Wool and its Share in Total GVO of Livestock:

	Value of Output at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Wool	244	253	229	218	228	239	240	251	247
Goat Hair	37	37	32	28	43	45	47	49	51
Camel Hair	1	1	1	1	1	1	1	1	1
Pig Bristles	43	49	52	49	53	52	54	55	54
Wool Group	**326**	**340**	**313**	**296**	**325**	**337**	**342**	**355**	**353**
Total	**180034**	**187779**	**195850**	**204454**	**217641**	**226676**	**240166**	**251831**	**261771**
% Share within Group									
Goat Hair	**11.5**	**10.9**	**10.1**	**9.4**	**13.4**	**13.4**	**13.8**	**13.8**	**14.5**
Camel Hair	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Pig Bristles	**13.3**	**14.5**	**16.7**	**16.7**	**16.2**	**15.6**	**15.7**	**15.4**	**15.4**
% Share of GVO (Livestock Sector)									
Goat Hair	**0.02**	**0.02**	**0.02**	**0.01**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**
Camel Hair	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Pig Bristles	**0.02**	**0.03**	**0.03**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**

Dung:

State-wise estimation of Value of output of dung is done on the basis of projected population of Bovines and corresponding evacuation rate. The Production of Dung is bifurcated into production of cakes and manure by applying the utilization rates. These utilization rates are State specific. Of the total quantity of dung for Dung cake, 40%, by weight, is converted to cake.

Following table represents value of output of Dung and its Share in Total GVO of Livestock:

	Value of Output at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Dung	**16051**	**16297**	**16688**	**16966**	**17868**	**18253**	**18797**	**19267**	**19717**
Total GVO (Livestock)	**180034**	**187779**	**195850**	**204454**	**217641**	**226676**	**240166**	**251831**	**261771**
% Share of GVO (Livestock Sector)	**8.9**	**8.7**	**8.5**	**8.3**	**8.2**	**8.1**	**7.8**	**7.7**	**7.5**

Increment:

The production (increment in livestock) is worked out by subtracting the projected population of the current year from the projected population of the next year. The projection is done on the basis Livestock census 2003 and Livestock census 2007. The various constituent of Livestock stocks are Cattle Male(CB), Cattle Female, Cattle Y/S, Cattle N/C, Cattle Male(INDG), Cattle Female, Cattle Y/S, Cattle N/C, Buffalo Male, Buffalo Female, Buffalo Y/S, Buffalo N/C, Goat, Sheep, Pigs, Camel, Horses & Ponies, Mules & Yaks, Donkeys, Adult Fowls, Adult Ducks, Chickens & Ducklings and Other Poultry. The information on price is supplied by State DES.

Following table represents value of Increment in Stock and its Share in Total GVO of Livestock:

	Value of Output at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Increment In L/S	**943**	**1757**	**2528**	**3522**	**4488**	**5207**	**5949**	**6786**	**7731**
Total GVO (Livestock)	**180034**	**187779**	**195850**	**204454**	**217641**	**226676**	**240166**	**251831**	**261771**
% Share of GVO (Livestock Sector)	**0.5**	**0.9**	**1.3**	**1.7**	**2.1**	**2.3**	**2.5**	**2.7**	**3**

Summary of recommendations:

- **The Integrated Sample Survey (ISS) conducted by the Department of Animal Husbandry need to expand its coverage to include Camel and Sheep Milk, Duck Egg for all the states, Goat Hair, Camel Hair and Pig Bristles.**

- **There is also need to cover the Unregistered Sector for meat and animals slaughtered, Meat Product (Heads and Legs, Fats from Slaughtered and Fallen Animals) and Meat By-product (Hides and Skins).**

- **Special surveys need to be conducted to estimate inputs of livestock sector i.e. Feed of Livestock, Market Charges and Operational Cost, etc. at state level. This is important to derive GVA for the Livestock sector.**

- **The Rates and Ratios obtained by CSO through National Meat Research Centre may be considered in place of the existing Rates and Ratios.**

CHAPTER-5

MAJOR AGRICULTURE INPUTS

Inputs play a major role in enhancing the agriculture productivity. Modern-day agriculture involves the use of mechanical ploughing, plastic mulches, chemical fertilizers, plant growth regulators or pesticides. It is associated with the increasing use of agricultural mechanization, which has enabled a substantial increase in production. Use of chemical fertilizers and pesticides has played a positive role in increasing agricultural productivity and in making India self-sufficient in food grain production. Yield of food-grain in India increased from 644 kg. per hectare in 1966-67 to 1636 kg. per hectare in 2000-2001(www.indiastat.com) i.e. this registered an impressive increase by around two and half times. This was mainly brought about by a more than 12 fold increase in the consumption of chemical fertilizers (from 1.1 million ton to 13.56 million tons) during the same period. This apart, inorganic chemical use in agriculture has also contributed towards increasing productivity of cash crops. In this chapter, various inputs used in the Agriculture and Livestock products, data availability, usage of input trends and issues thereof are discussed.

Seeds

The seed scenario in the country is changing fast and with significant increase in Seed Replacement Ratio (SRR) of major field crops during the last one decade and availability of plenty of certified/quality seeds in the country, the competition is hotting up with entry of several multi-national companies in the production of quality seeds and farmers' preferences are changing from varieties to hybrids. Therefore, all the seed producing companies have to give more stress in improving its product basket both in terms of better varieties/hybrids as well as improved services to the farming community. India need dependable supplier of quality seeds at affordable prices.

Following table depicts the value of input and share of Seed:

	Value of Input at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Seed	12537	13151	13497	14113	14113	13397	14224	14254	14318
TOTAL INPUTS	**175865**	**183797**	**190104**	**195246**	**202560**	**208401**	**224281**	**233638**	**237692**
% of total Input	**7.1**	**7.2**	**7.1**	**7.2**	**7.0**	**6.4**	**6.3**	**6.1**	**6.0**

Seed rates (quantity per hectare) are available from the *Cost of Cultivation Studies* (CCS) and the State Agricultural Departments for principal crops and some minor crops. These data are supplemented wherever necessary by data contained in the relevant Marketing Reports and other sources. Seed rates (if in Qty.) are multiplied with corresponding prices to obtain input value of seed per Hectare. For more accuracy Average seed rate is estimated using the last few years Cost of Cultivation Studies. In case of crops where hybrid varieties of seeds are used, input value of seed per hectare is used, as the prevailing price of the crop for which seed is used, may not be the appropriate price to represent the seed price.

Fertilizers

Fertilizer is a kingpin in enhancing crop production. It is also a key to securing the food need of a country. No country has been able to increase agricultural productivity without expanding the use of chemical industry. Balanced fertilization means application of essential plant nutrients, particularly the major nutrients, N, P and K in optimum quantity through correct method and time of application in right proportion. It is essential to encourage the use of nitrogenous, phosphatic and potassic fertilizers, so as to achieve the desirable consumption ratio of 4:2:1 to maintain the soil health and to sustain the crop productivity. With the use of unbalanced ratio of these fertilizers the coefficient of fertilizer use has considerably gone down, thus, adversely affecting the acreage yields of economical crops.

The fertilizers constitute the most important scientific breakthrough in feeding the growing populations of India. Food and Agriculture Organization (FAO) of the United Nations has estimated that contribution of fertilizer in increasing crop productivity is about 50 per cent. Studies show that contribution of fertilizers through crop production ranges between 30 to 50 per cent under a given soil climatic conditions. Fertilizer production and consumption in India showed an outstanding growth over a period of time.

Inorganic Manure:

Following table depicts the value of input and share of Inorganic Manure:

	Value of Input at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Chemical fertilisers	23953	26436	27924	28451	31274	33665	35983	36755	32911
TOTAL INPUTS	**175865**	**183797**	**190104**	**195246**	**202560**	**208401**	**224281**	**233638**	**237692**
% of total Input	**13.6**	**14.4**	**14.7**	**14.6**	**15.4**	**16.2**	**16.0**	**15.7**	**13.8**

The estimates of consumption of chemical fertilizers are based on the material wise consumption of chemical fertilizers, as per *'Fertilizer Statistics', a publication of Fertilizer Association of India*. Earlier estimation of Fertilizers used as input was on the basis of material wise distribution (dispatches) of chemical fertilizers to States/UTs. The consumption of chemical fertilizers is evaluated at retail prices available from the same source.

Organic Manure:

Following table depicts the value of input and share of Organic Manure:

	Value of Input at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Organic manure	9654	9875	10055	10224	10932	11264	11590	11925	12212
TOTAL INPUTS	**175865**	**183797**	**190104**	**195246**	**202560**	**208401**	**224281**	**233638**	**237692**
% of total Input	**5.5**	**5.4**	**5.3**	**5.2**	**5.4**	**5.4**	**5.2**	**5.1**	**5.1**

For Organic Manure only dung manure is evaluated in input. It is assumed that the some part of dung of the animal husbandry is used as input in the agriculture sector and remaining as dung fuel. For estimation of value of input as dung manure, State-wise evacuation rate, *provided by Integrated Sample Survey (ISS)*, is multiplied with corresponding animal population to estimate total dung production. Further, State-wise utilization rates (for Dung Cake and Manure) are applied on State-wise dung production to estimate dung manure.

Livestock feed:

Following table depicts the value of input and share of Livestock feed:

Value of Input at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Feed of livestock	87714	87450	88126	88530	89648	90355	93789	95366	96765
TOTAL INPUTS	**175865**	**183797**	**190104**	**195246**	**202560**	**208401**	**224281**	**233638**	**237692**
% of total Input	**49.9**	**47.6**	**46.4**	**45.3**	**44.3**	**43.4**	**41.8**	**40.8**	**40.7**

The feed consumption of animals used for cultivation activities as well as production of livestock and livestock products, is considered as input. Livestock feed comprises of (i) roughages (cane trash, grass, fodder, stalks, straw etc.) (ii) concentrates (include salt, medicines, oil cakes, crushed pulses, grains, grams, rice bran, husk, oil seeds, gur etc.).Entire stalk and straw is not treated as livestock feed, some part is attributed to wastage also. For concentrates, annual value per animal for the base year is available which is inflated with appropriate index to arrive at the annual value of concentrates consumed per animal for the current year.

For roughages, entire production of fodder, cane trash and grass and 95 per cent of production of by products (stalks and straws) in the agriculture sector are considered to be consumed by livestock population. *The rates of by-products are provided by CCS*. An adjustment is made for the consumption of these items by animals, which are not used in agriculture sector viz., bullocks, horses, camels etc., mainly used for non- agricultural purpose such as transportation etc.. Contribution of fodder from forest is also accounted and is some percentage of fodder from Non Forest.

Concentrates are largely based on the Cost of Cultivation Studies. The estimates of feed of livestock as available from the CCS have also been corroborated by the studies undertaken on feed of livestock by the State DESs of Maharashtra and Himachal Pradesh. The rate of concentrates for different animals for the base year

2004-2005 are Cattle/ Buffalo is Rs. 685.26, Sheep/ Goat/ Pigs is Rs.164.82, and Poultry is Rs. 121.38.

Irrigation charges:

Following table depicts the value of input and share of Irrigation charges:

	Value of Input at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Irrigation charges	1333	1333	1388	1445	1585	1585	2032	2022	2023
TOTAL INPUTS	**175865**	**183797**	**190104**	**195246**	**202560**	**208401**	**224281**	**233638**	**237692**
% of total Input	**0.8**	**0.7**	**0.7**	**0.7**	**0.8**	**0.8**	**0.9**	**0.9**	**0.9**

Annual data on irrigation charges payable to the *government from the States*, consolidated from the respective irrigation departments. The items on which information is being collected are (i) sale of water for irrigation purposes, (ii) irrigation cess, (iii) local cess on water charges, (iv betterment levy, and (v) other items. *The Information on Gross Irrigated Area is provided by DES, M/o Agriculture and DES (States).*

Market Charges:

Following table depicts the value of input and share of Market Charges:

	Value of Input at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Market charges	14837	16882	16278	17232	17234	16966	18743	19717	19714
TOTAL INPUTS	**175865**	**183797**	**190104**	**195246**	**202560**	**208401**	**224281**	**233638**	**237692**
% of total Input	**8.4**	**9.2**	**8.6**	**8.8**	**8.5**	**8.1**	**8.4**	**8.4**	**8.3**

This is prepared separately for agriculture and livestock. Data on market charges for various commodities by location of markets in the districts are received from DES Ag. The study of marketing margins is based mainly on two types of data viz. (a) data on price at successive stages of marketing and (b) data on transportation, processing, storage etc.

Market Margin study was conducted for 15 crops i.e., paddy, wheat, maize, gram, ginger , mango, potato, onion, arhar, gram, tobacco, gur, groundnut, kapas, apple and tea during 2004-05, by the Directorate of Economics and Statistics(DES), Ministry of Agriculture. It has been found that the percentage of market margins and market costs to the total value of output of 15 crops is 3.22 as against 2.358 used in 1999-2000 series. The percentage of market charges to the value of output thus obtained is assumed to remain constant over the years until it is revised.

Market charges in respect of meat are estimated on the basis of Municipal Rates on meat.In the revised series, based on the data received from the States/UTs, the charges per animal have been revised as Rs.25/- for cattle/buffalo, Rs. 5/-for goat/sheep and Rs. 7/- for pig .

Electricity:

Modern agriculture needs modern energy - the two are closely linked. For many developing countries, agriculture is the dominant sector in developing the economy. Increasing productivity and the modernisation of agricultural production systems are the primary drivers of global poverty reduction and energy plays a key role in achieving this. Energy input to modern and sustainable agricultural production and processing systems is a key factor in moving beyond subsistence farming towards food security, added value in rural areas and expansion into new agricultural markets. There are two main energy requirements for greater agricultural productivity in a market-oriented agriculture, provided either by renewable or conventional energy sources or a combination of both:

The important role played by modern energy services and related technologies in modern smallholder agriculture throughout the supply chain, from agricultural production, post-harvest and storage to the processing and commercialization of crops, needs to be accepted. The dual role of agriculture as energy user and producer needs recognition and suggests information management models of a book keeping kind.

As a result of increased mechanization in agriculture, crop production and rural agro processing emerged as one of the major consumers of commercial energy. The share of mechanical and electrical power in agriculture increased from 40% in 1971-72 to 84% in 2003-04.

Following table depicts the value of input and share of Electricity:

	Value of Input at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Electricity	6006	5898	6625	7214	7420	8149	8876	10475	10475
TOTAL INPUTS	**175865**	**183797**	**190104**	**195246**	**202560**	**208401**	**224281**	**233638**	**237692**
% of total Input	**3.4**	**3.2**	**3.5**	**3.7**	**3.7**	**3.9**	**4.0**	**4.5**	**4.4**

Data on electricity consumed for agricultural purposes and its corresponding price per unit are obtained from the *Central Electricity Authority (**CEA**)* on an annual basis at state level.

8. Pesticides and Insecticides:

Following table depicts the value of input and share of Pesticides and Insecticides:

	Value of Input at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Pest. and Insecticides	920	899	940	1003	992	1038	1257	1199	1199
TOTAL INPUTS	**175865**	**183797**	**190104**	**195246**	**202560**	**208401**	**224281**	**233638**	**237692**
% of total Input	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.6**	**0.5**	**0.5**

Estimates of consumption of pesticides and insecticides both in terms of quantity and value are available from the *Directorate of Plant Protection and Quarantine, Ministry of Agriculture*, as against the earlier source of Crop Care Foundation of India at state level.

9. Diesel oil:

An efficient transport system is critically important to efficient agricultural marketing. If transport services are infrequent, of poor quality or expensive then farmers will be at a disadvantage when they attempt to sell their crops. An expensive service will naturally lead to low farm gate prices (the net price the farmer receives from selling his produce). Seasonally impassable roads or slow and infrequent transport services, coupled with poor storage, can lead to losses as certain crops (e.g. Fruits, fresh vegetables, tea) deteriorate quickly over time. If the journey to market is made over rough roads then other crops (e.g. bananas, mangoes) may also suffer losses from bruising; this will also result in lower prices to the farmer. If the margin between what the farmer receives from the sale of his produce and what the urban consumer pays for his produce is high then the effective demand transferred to the farmer will be correspondingly be reduced.

Following table depicts value of input and share of Diesel oil:

	Value of Input at Constant Prices (in ₹ Crore)								
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Diesel oil	10428	11372	10961	11579	11413	12690	14105	15985	18519
TOTAL INPUTS	**175865**	**183797**	**190104**	**195246**	**202560**	**208401**	**224281**	**233638**	**237692**
% of total Input	**5.9**	**6.2**	**5.8**	**5.9**	**5.6**	**6.1**	**6.3**	**6.8**	**7.8**

The consumption of diesel oil is estimated from the number of tractors and diesel engines in use and per unit consumption of diesel oil. The data on the number of tractors and diesel engines used in agriculture is estimated through the *Indian Livestock Census (ILC)*. The norms of consumption of diesel oil per tractor/diesel engine are based on the information collected from *the schedules of CCS*.

Repairs and maintenance and operational costs:

Following table depicts the value of input and share of Repairs and maintenance and operational costs:

Value of Input at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Current repairs	3249	3535	3699	3843	4929	5451	6058	6750	7493
TOTAL INPUTS	**175865**	**183797**	**190104**	**195246**	**202560**	**208401**	**224281**	**233638**	**237692**
% of total Input	**1.8**	**1.9**	**1.9**	**2.0**	**2.4**	**2.6**	**2.7**	**2.9**	**3.2**

Various fixed assets employed in Agriculture sector for the purpose of production can be classified and described as agricultural implements, machinery and transport equipments, farm houses, barns (grain golas) and cattle sheds, orchards and plantations, bunding and other land means, wells and other irrigation resources etc. The estimates of expenditure on current repairs and maintenance for all these categories except for agricultural implements and machinery, are prepared both for rural and urban areas using the data from *All India Debt and Investment Survey (AIDIS)*. The expenditure so obtained is moved to the subsequent years by the index of cost of rural/urban 'other construction works', prepared specially for this purpose for getting the estimates at current prices. In the case of agricultural machinery and implements, the point estimate on expenditure on repairs and maintenance obtained from AIDIS, is moved forward with the help of value of products and by-products of this group from the Annual Survey of Industries (ASI).

Though some of the items of inputs are estimated with the results of cost of Cultivation studies, efforts should be taken to cover more items and make use of the analysed results for compilation and cross validation. This is more so when the plot level data are made available for about than 10 years. Time series analyses can also be on various inputs so analysed from the plot level data of the CCS.

Summary of Recommendations:

- **Seed rates (quantity per hectare) are available from the *Cost of Cultivation Studies* (CCS) and the State Agricultural Departments**

only for the principal crops and some minor crops. Special studies required to be conducted to supplement CCS to cover other crops as well so that the overall input costs on seed usage is captured.

- **The estimates of consumption of chemical fertilizers are based on the material wise consumption of chemical fertilizers, as per *'Fertilizer Statistics', a publication of Fertilizer Association of India*. The same may be continued.**

- **For estimation of value of input as dung manure, the present method based on evacuation rate and utilization rates of Dung for manure may continue until alternative rate are made available through special surveys.**

- **The existing method for Animal feed of roughages consisting of fodder, cane trash and grass and 95 per cent of production of by products (stalks and straws) in the agriculture sector considered to be consumed by livestock population would be continued taking into account the adjustments for the consumption of animals not used in agriculture sector(viz., bullocks, horses, camels etc., mainly used for non- agricultural purpose such as transportation etc..) and fodder from forest and some percentage of fodder from Non Forest.**

- **The rate of concentrates for different animals are Cattle/ Buffalo is Rs. 685.26, Sheep/ Goat/ Pigs is Rs.164.82, and Poultry is Rs. 121.38 based on the Cost of Cultivation Studies and corroborated by special studies by State DESs would be continued.**

- **Annual data on irrigation charges payable to the *government from the States*, consolidated from the respective irrigation departments based on the budget analyses would be continued.**

- **Market charges based on the Special studies conducted by the Ministry of Agriculture may be continued to use till new results were made available.**

- **Data on electricity consumed for agricultural purposes and its corresponding price per unit supplied by the *Central Electricity Authority (CEA)* on an annual basis at state level would be continued to be used.**

- **Estimates of consumption of pesticides and insecticides both in terms of quantity and value supplied by the *Directorate of Plant Protection and Quarantine, Ministry of Agriculture*, would be continued to be used.**

- **The existing method of consumption of diesel oil based on the number of tractors and diesel engines estimated through the *Indian Livestock Census (ILC)* in use and per unit consumption of diesel oil based on CCS would be continued. Whenever the new results are made available by the Livestock Census and CCS, the same would be substituted.**

- **The existing method of estimation of expenditure on current repairs and maintenance based on *All India Debt and Investment Survey (AIDIS) would be continued.***

- **Though some of the items of inputs are estimated with the results of cost of Cultivation studies, efforts should be taken to cover more items and make use of the analysed results for compilation and cross validation. This is more so when the plot level data are made available for about than 10 years. Time series analyses can also be on various inputs so analysed from the plot level data of the CCS.**

CHAPTER-VI
Agricultural Prices

AGRICULTURAL PRICES

Agricultural prices cover prices of agricultural products (output prices) and prices of requisites for agricultural production (input prices) at various stages of marketing. Main focus here is the Farm-Harvest price of the Agricultural commodities which are considered for the compilation of National Accounts Statistics and the purchaser prices of inputs for the Agriculture products. Multiplicity of agencies involved in price data collection and the prices are differing significantly in some cases for the same commodity. Price data plays key role in valuation of the products.

The price data are collected in terms of (i) weekly and daily wholesales prices, (ii) retail prices of essential commodities, and (iii) farm harvest prices. Farm Harvest Prices are collected by the field staff of the State revenue departments for 36 commodities at the end of each crop season and published by the DESMOA. It brings out a periodical publication entitled "Farm Harvest Prices of Principal Crops in India". Directorate of Marketing Intelligencen(DMI) under Ministry of Agriculture is primarily responsible to collect price data on Agricultural products. **The Committee is of the view that the prices of all commodities should be covered at least on regular intervals if not annually.**

Data on Farm Harvest Prices

Farm prices have been defined as the average wholesale price at which the commodity is disposed of by the producer at the village site during the specified harvesting period. Farm harvest prices are collected for 36 commodities in this Directorate from 30 States & Union Territories. These are reported by different State agencies viz. Bureau of Economics & Statistics, Directorate of Agricultural Statistics, Directorate of Land Records. At present, the Farm (Harvest) Prices are published in "Farm (Harvest) Prices of Principal Crops in India".

The price data is collected every week from a certain number of representative villages in each district on purposive basis during the specified harvesting period (generally six to eight weeks during tile peak period of marketing after the commencement of harvest). In such selected village, the prices at which commodity is sold by the producer is recorded on every Friday during tile peak period of marketing. If no sales take place on that day, the price at which the commodity was sold last during the week is recorded. The weekly prices of the selected villages are averaged for tehsils & districts by taking their simple mean. The method of striking the average price for the State as whole is worked out with the district production figures for the current year as weights.

Farm Harvest Prices-Methodology of collection

A certain number of representative villages, not less than 10, are selected in each district. The price reporter collects the price every Friday during the peak period of marketing after the starting of harvesting for the period of six to eight week. The State average price of a commodity is a weighted average price, with district production figures for the concerned year as weights.

Farm harvest prices (FHP) are collected in respect of different crops viz. paddy, jowar, bajra, maize, ragi, wheat, barley, gram, tur (Arhar), groundnut, rapeseed and mustard, sesamum, linseed, castor seed, toria, cotton, jute, sannhemp, pepper, ginger, chilly, turmeric, mesta, sugar-raw, potato and tobacco, soyabean, banana etc. by the Directorate of Economics and Statistics, Ministry of Agriculture, Government of India on a continuous basis. For quoting farm harvest prices, first of all a particular variety of the crop, which is most extensively cultivated in the district is selected. The harvest period for each crop is fixed by the state government to facilitate proper recording. Harvest period is usually of 6 to 8 week's duration after the commencement of harvesting. FHP is reported at the district and state levels. Presently most of the States and Union Territories using a common methodology collect farm harvest prices. The data in some States are collected only from a few selected centres and thus are not fully representative of prices prevailing in rural areas. Price data during the harvest period are reported every Friday. The simple

arithmetic average is taken to represent the harvest season price of that crop at the village level. The simple arithmetic average of the village price gives the tehsil level prices and the average at the district level is the simple arithmetic average of tehsil prices. The average farm harvest prices for each crop for the state as a whole are worked out at the state headquarters by DES, which is the weighted average of the district prices using the quantity of the base period average production of the crop in the district as weight. Some of the issues discussed during the second meeting are given below:

1. Irregular and delayed reporting.
2. Better supervision by the Market Intelligence Unit staff on the work done by state price reporters and give on the spot guidance in reporting of Farm-harvest prices.
3. Removal of duplication in data collection by different agencies DES, Agmarknet, others
4. Lack of uniformity in quality, unit and time
5. Requirement of better networking /communication among reporting agencies

Prices of all states averaged and the corresponding growth rates with the WPI growth rates are compared item-wise for better understanding of the crop prices. Farm-harvest prices are expected to be lower than the wholesale prices.

CEREALS

BAJRA.

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	5417	6159	6654	6519	7905	9791	9125	9625	12642
WPI	100.0	110.5	122.5	128.0	139.2	168.1	175.6	193.2	233.5
GR-PRICE		13.7	8.0	-2.0	21.3	23.9	-6.8	5.5	31.3
GR-WPI		10.5	10.8	4.5	8.7	20.8	4.5	10.0	20.8

BARLEY

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	6060	7176	7111	9917	8335	9182	11059	11841	12351
WPI	100.0	114.8	123.7	136.6	152.9	150.6	165.7	180.2	208.0
GR-PRICE		18.4	-0.9	39.5	-16.0	10.2	20.4	7.1	4.3
GR-WPI		14.8	7.7	10.4	11.9	-1.5	10.0	8.8	15.5

JOWAR

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	6381	6885	7377	9607	9436	10308	15131	16071	15481
WPI	100.0	109.5	124.6	148.0	151.2	168.6	189.5	248.6	235.8
GR-PRICE		7.9	7.2	30.2	-1.8	9.2	46.8	6.2	-3.7
GR-WPI		9.5	13.8	18.8	2.2	11.5	12.4	31.1	-5.1

PADDY

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	5812	6077	6364	7512	8779	10083	10784	10715	11783
WPI	100.0	105.2	110.0	122.5	140.6	157.9	167.2	172.3	194.2
GR-PRICE		4.6	4.7	18.0	16.9	14.9	7.0	-0.6	10.0
GR-WPI		5.2	4.6	11.3	14.8	12.3	5.9	3.1	12.7

PADDY- PROCURED

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	5612	5703	6217	7487	9036	10074	10136	10817	12500
WPI	100.0	105.2	110.0	122.5	140.6	157.9	167.2	172.3	194.2
GR-PRICE		1.6	9.0	20.4	20.7	11.5	0.6	6.7	15.6
GR-WPI		5.2	4.6	11.3	14.8	12.3	5.9	3.1	12.7

RAGI

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	5073	5316	6532	6649	7091	9390	9805	10396	14222
WPI	100.0	101.4	112.2	123.4	134.9	174.7	173.8	204.9	278.3
GR-PRICE		4.8	22.9	1.8	6.6	32.4	4.4	6.0	36.8
GR-WPI		1.4	10.7	10.0	9.4	29.5	-0.5	17.9	35.8

WHEAT

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	6972	7973	8855	10209	10805	11358	11876	12286	14466
WPI	100.0	105.0	125.1	134.3	147.6	166.5	171.4	168.3	194.4
GR-PRICE		14.4	11.1	15.3	5.8	5.1	4.6	3.5	17.7
GR-WPI		5.0	19.1	7.3	9.9	12.8	3.0	-1.8	15.5

WHEAT - PROCURED

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	6400	7000	8500	10000	10800	11000	11788	12850	13500
WPI	100.0	105.0	125.1	134.3	147.6	166.5	171.4	168.3	194.4
GR-PRICE		9.4	21.4	17.6	8.0	1.9	7.2	9.0	5.1
GR-WPI		5.0	19.1	7.3	9.9	12.8	3.0	-1.8	15.5

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the cereal groups are not consistent. Even the direction is not the same and magnitude is too alarming in some cases.

PULSES

ARHAR

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	16489	17504	21711	25017	31448	39437	35174	33775	36215
WPI	100.0	98.1	108.3	126.1	144.3	214.7	205.1	183.2	199.4
GR-PRICE		6.2	24.0	15.2	25.7	25.4	-10.8	-4.0	7.2
GR-WPI		-2.0	10.5	16.4	14.4	48.8	-4.5	-10.7	8.8

MOONG

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	17119	23131	26507	21972	27568	46082	40906	36609	42533
WPI	100.0	121.7	160.3	141.2	150.4	233.8	280.4	244.4	259.5
GR-PRICE		35.1	14.6	-17.1	25.5	67.2	-11.2	-10.5	16.2
GR-WPI		21.7	31.8	-11.9	6.5	55.4	19.9	-12.8	6.2

MASOOR

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	17525	18969	21880	27044	34184	33856	33721	33162	39042
WPI	100.0	102.5	115.0	145.7	196.2	228.2	194.5	162.8	193.9
GR-PRICE		8.2	15.3	23.6	26.4	-1.0	-0.4	-1.7	17.7
GR-WPI		2.5	12.2	26.7	34.7	16.3	-14.8	-16.3	19.1

URAD

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	15848	22027	27477	23315	26226	38073	38693	36016	33009
WPI	100.0	131.1	191.3	159.8	159.8	228.4	271.8	240.0	227.7
GR-PRICE		39.0	24.7	-15.2	12.5	45.2	1.6	-6.9	-8.3
GR-WPI		31.1	46.0	-16.5	0.0	43.0	19.0	-11.7	-5.1

GRAM

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	14769	17798	20775	22874	22625	23005	23630	30312	37794
WPI	100.0	113.9	156.2	149.0	153.8	152.2	150.0	193.8	266.3
GR-PRICE		20.5	16.7	10.1	-1.1	1.7	2.7	28.3	24.7
GR-WPI		13.9	37.0	-4.6	3.2	-1.1	-1.4	29.2	37.4

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the pulses group are not consistent. Even the direction is not the same and magnitude is too alarming in some cases.

OILSEEDS

COCONUT (IN ML NUTS)

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	5002	4549	4116	4171	4818	6418	6116	7034	5809
WPI	100.0	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2
GR-PRICE		-9.0	-9.5	1.3	15.5	33.2	-4.7	15.0	-17.4
GR-WPI		-14.4	19.3	80.6	23.7	-25.9	-15.1	16.4	15.1

CASTOR

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	15869	13893	18285	23640	22868	26958	44259	48624	40536
WPI	100.0	89.4	95.4	121.3	146.8	154.5	222.8	255.6	207.6
GR-PRICE		-12.4	31.6	29.3	-3.3	17.9	64.2	9.9	-16.6
GR-WPI		-10.6	6.8	27.1	21.0	5.3	44.2	14.7	-18.8

GROUND NUT

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	16671	16550	19776	23338	23804	25841	29282	34830	43575
WPI	100.0	96.8	109.5	140.3	144.3	148.0	164.8	200.0	246.9
GR-PRICE		-0.7	19.5	18.0	2.0	8.6	13.3	18.9	25.1
GR-WPI		-3.2	13.2	28.1	2.8	2.5	11.4	21.4	23.4

SAFFLOWER

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	14830	13400	14508	21092	21561	20051	20854	26825	26340
WPI	100.0	89.0	87.7	103.0	120.5	122.2	134.6	138.4	149.5
GR-PRICE		-9.6	8.3	45.4	2.2	-7.0	4.0	28.6	-1.8
GR-WPI		-11.0	-1.5	17.5	16.9	1.4	10.2	2.8	8.1

SOYABEAN

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	13978	13030	13479	16741	19062	21109	21055	22764	34153
WPI	100.0	82.0	79.5	100.7	129.8	141.2	128.4	140.8	211.9
GR-PRICE		-6.8	3.5	24.2	13.9	10.7	-0.3	8.1	50.0
GR-WPI		-18.0	-3.1	26.7	28.9	8.9	-9.1	9.7	50.5

LINSEED

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	17217	17372	18726	22540	24614	26907	27732	28303	38333
WPI	100.0	98.8	103.1	113.7	127.4	123.4	122.1	151.7	203.9
GR-PRICE		0.9	7.8	20.4	9.2	9.3	3.1	2.1	35.4
GR-WPI		-1.3	4.4	10.3	12.0	-3.1	-1.0	24.2	34.4

NIGERSEED

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	18346	17228	18306	24133	25057	24729	29247	30148	32669
WPI	100.0	85.6	102.1	184.4	228.1	169.1	143.6	167.1	192.3
GR-PRICE		-6.1	6.3	31.8	3.8	-1.3	18.3	3.1	8.4
GR-WPI		-14.4	19.3	80.6	23.7	-25.9	-15.1	16.4	15.1

RAPESEED & MUSTARD

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	16265	16008	17757	23747	22578	22821	24478	32463	36881
WPI	100.0	95.9	100.0	118.2	144.4	139.2	135.1	149.8	202.7
GR-PRICE		-1.6	10.9	33.7	-4.9	1.1	7.3	32.6	13.6
GR-WPI		-4.1	4.3	18.2	22.2	-3.6	-3.0	10.9	35.3

SUNFLOWER

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	16861	17085	20311	24904	24602	20872	23135	27656	31157
WPI	100.0	96.0	101.6	132.0	130.9	124.7	140.8	162.7	181.7
GR-PRICE		1.3	18.9	22.6	-1.2	-15.2	10.8	19.5	12.7
GR-WPI		-4.0	5.9	29.9	-0.9	-4.7	12.9	15.6	11.7

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the Oil seeds group are not consistent. Even the direction is not the same and magnitude is too alarming in some cases.

SUGAR

GUR

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	13149	14292	13186	13352	19941	25639	26800	28092	31758
WPI	100.0	115.6	109.2	95.7	127.2	195.4	197.2	197.2	217.1
GR-PRICE		8.7	-7.7	1.3	49.4	28.6	4.5	4.8	13.1
GR-WPI		15.6	-5.5	-12.4	32.9	53.6	0.9	0.0	10.1

SUGARCANE

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	1052	1163	1059	1049	1283	1841	1874	2026	2221
WPI	100.0	100.2	100.9	101.7	101.3	106.6	156.4	166.4	172.5
GR-PRICE		10.6	-9.0	-0.9	22.3	43.5	1.8	8.1	9.6
GR-WPI		0.2	0.8	0.7	-0.4	5.2	46.8	6.4	3.7

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the Sugar group are not consistent. Even the direction is not the same and magnitude is too alarming in some cases.

FIBRES

JUTE

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	1573	2094	2286	1966	2446	3420	4684	3925	4276
WPI	100.0	134.9	136.0	122.4	137.9	160.5	210.7	222.5	242.4
GR-PRICE		33.1	9.2	-14.0	24.4	39.8	37.0	-16.2	8.9
GR-WPI		34.9	0.8	-10.0	12.6	16.4	31.3	5.6	8.9

KAPAS

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	19047	18959	20437	22386	26792	29729	45952	45974	40105
WPI	100.0	90.2	96.6	111.8	141.2	138.6	199.3	225.2	206.0
GR-PRICE		-0.5	7.8	9.5	19.7	11.0	54.6	0.0	-12.8
GR-WPI		-9.8	7.2	15.7	26.3	-1.9	43.9	13.0	-8.5

MESTA

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	1767	1880	1891	1715	6020	2368	2608	2702	2839
WPI	100.0	131.4	148.6	136.5	129.2	164.8	238.1	211.7	222.2
GR-PRICE		6.4	0.6	-9.3	250.9	-60.7	10.1	3.6	5.1
GR-WPI		31.4	13.0	-8.2	-5.3	27.6	44.5	-11.1	5.0

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the Fibre group are not consistent. Even the direction is not the same and magnitude is too alarming in some cases.

DRUGS & NARCOTICS

TEA

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	7785	7970	9796	8985	11199	12955	13525	13891	17554
WPI	100.0	88.9	104.2	104.4	153.2	174.1	148.3	150.9	198.6
GR-PRICE		2.4	22.9	-8.3	24.6	15.7	4.4	2.7	26.4
GR-WPI		-11.1	17.2	0.2	46.8	13.6	-14.8	1.7	31.6

COFFEE

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	68657	76689	80011	96134	111223	140184	152569	191437	191988
WPI	100.0	137.6	162.0	177.6	209.5	231.1	235.0	320.1	311.1
GR-PRICE		11.7	4.3	20.2	15.7	26.0	8.8	25.5	0.3
GR-WPI		37.6	17.7	9.6	17.9	10.3	1.7	36.2	-2.8

TOBACCO LEAF

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	27158	29830	30105	37171	61321	71518	60747	61303	66471
WPI	100.0	107.1	107.0	113.5	119.4	120.5	122.5	140.1	146.6
GR-PRICE		9.8	0.9	23.5	65.0	16.6	-15.1	0.9	8.4
GR-WPI		7.1	-0.1	6.1	5.2	0.9	1.6	14.4	4.6

TOBACCO STEM

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	14111	15098	15212	17035	31691	36961	31561	31820	32909
WPI	100.0	107.1	107.0	113.5	119.4	120.5	122.5	140.1	146.6
GR-PRICE		7.0	0.8	12.0	86.0	16.6	-14.6	0.8	3.4
GR-WPI		7.1	-0.1	6.1	5.2	0.9	1.6	14.4	4.6

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the Drugs & Narcotics group are not consistent. Even the direction is not the same and magnitude is too alarming in some cases.

CONDIMENTS & SPICES

ARECANUT

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	33297	44480	57876	44713	48194	48291	77932	65946	102799
WPI	100.0	107.9	139.5	141.1	139.3	141.6	154.7	209.8	226.7
GR-PRICE		33.6	30.1	-22.7	7.8	0.2	61.4	-15.4	55.9
GR-WPI		7.9	29.2	1.2	-1.3	1.7	9.2	35.6	8.1

BLACK PEPPER

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	68329	67135	94214	126229	117421	126046	172096	245341	324779
WPI	100.0	92.7	132.5	184.6	180.8	186.3	247.1	402.9	519.0
GR-PRICE		-1.7	40.3	34.0	-7.0	7.3	36.5	42.6	32.4
GR-WPI		-7.3	42.9	39.4	-2.1	3.0	32.7	63.1	28.8

CARDAMOM

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	212134	192501	202407	297532	369486	507177	759002	544479	543792
WPI	100.0	84.7	93.5	124.4	141.3	206.6	348.2	291.4	277.2
GR-PRICE		-9.3	5.1	47.0	24.2	37.3	49.7	-28.3	-0.1
GR-WPI		-15.4	10.4	33.1	13.6	46.2	68.6	-16.3	-4.8

CORIANDER

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	18579	24014	26520	45132	39420	32214	40712	36223	50303
WPI	100.0	110.6	140.6	185.5	321.9	212.3	174.1	216.2	220.7
GR-PRICE		29.3	10.4	70.2	-12.7	-18.3	26.4	-11.0	38.9
GR-WPI		10.6	27.1	31.9	73.6	-34.1	-18.0	24.2	2.1

CUMIN

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	63520	55836	94406	89719	94168	102676	128475	142800	134408
WPI	100.0	100.1	107.4	125.8	124.4	150.3	163.4	188.5	193.0
GR-PRICE		-12.1	69.1	-5.0	5.0	9.0	25.1	11.1	-5.9
GR-WPI		0.1	7.2	17.1	-1.1	20.8	8.7	15.4	2.4

DRY CHILLIES

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	35050	36316	38838	43036	49508	50893	64305	71765	63764
WPI	100.0	83.9	162.4	157.1	182.6	205.2	221.8	277.1	235.1
GR-PRICE		3.6	6.9	10.8	15.0	2.8	26.4	11.6	-11.1
GR-WPI		-16.1	93.5	-3.2	16.3	12.4	8.1	24.9	-15.2

DRY GINGER

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	30307	31334	26041	26176	29386	34569	43710	37685	39366
WPI	100.0	100.0	81.9	82.6	98.6	103.1	119.3	90.1	91.3
GR-PRICE		3.4	-16.9	0.5	12.3	17.6	26.4	-13.8	4.5
GR-WPI		0.0	-18.1	0.8	19.4	4.6	15.7	-24.4	1.3

GARLIC

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	24942	22871	30206	30023	27080	30333	44481	37774	15021
WPI	100.0	92.8	202.3	211.5	132.0	228.1	410.1	281.1	110.9
GR-PRICE		-8.3	32.1	-0.6	-9.8	12.0	46.6	-15.1	-60.2
GR-WPI		-7.2	118.0	4.5	-37.6	72.8	79.8	-31.5	-60.6

TURMERIC

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	27593	28854	22454	25417	37781	72490	96834	53256	42081
GR-PRICE		4.6	-22.2	13.2	48.6	91.9	33.6	-45.0	-21.0
WPI	100.0	90.5	88.1	82.8	105.4	210.3	401.7	214.9	166.3
GR-WPI		-9.6	-2.6	-6.1	27.4	99.5	91.0	-46.5	-22.6

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the CONDIMENTS & SPICES group are not consistent. Even the direction is not the same and magnitude is too alarming in some cases.

FLORICULTURE

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	64636	73891	77819	81501	91565	114624	134084	118399	114419
WPI	100.0	103.8	106.1	129.8	152.3	179.2	181.9	153.9	148.5
GR-PRICE		14.3	5.3	4.7	12.3	25.2	17.0	-11.7	-3.4
GR-WPI		3.8	2.2	22.3	17.3	17.7	1.5	-15.4	-3.5

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the FLORICULTURE group is not consistent. The direction is the same and magnitude is alarming in the year 2007-08 and 2010-11.

OTHER MISC. CROPS

FODDER

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	816	873	899	982	1071	1334	1718	1592	1858
WPI	100.0	108.9	116.3	122.1	112.5	142.4	185.9	191.9	225.9
GR-PRICE		7.0	3.0	9.2	9.1	24.5	28.8	-7.3	16.7
GR-WPI		8.9	6.9	4.9	-7.9	26.6	30.6	3.2	17.7

RUBBER

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	51483	62505	87240	88025	98263	106837	173360	190642	162381
WPI	100.0	119.8	164.9	163.8	182.7	205.7	338.7	375.0	318.3
GR-PRICE		21.4	39.6	0.9	11.6	8.7	62.3	10.0	-14.8
GR-WPI		19.8	37.6	-0.7	11.5	12.6	64.7	10.7	-15.1

GUAR SEED

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	13358	15583	16430	16025	14472	22788	25143	104435	112327
WPI	100.0	120.2	131.1	128.1	127.5	143.1	152.3	388.7	756.4
GR-PRICE		16.7	5.4	-2.5	-9.7	57.5	10.3	315.4	7.6
GR-WPI		20.2	9.1	-2.3	-0.4	12.2	6.4	155.3	94.6

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the OTHER MISC. CROPS group is not consistent. The direction is not the same and magnitude is alarming.

FRUITS

APPLE

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	14576	14303	12169	12748	14008	16175	15016	15943	29118
WPI	100.0	100.9	124.8	124.6	134.7	171.2	173.6	220.4	241.4
GR-PRICE		-1.9	-14.9	4.8	9.9	15.5	-7.2	6.2	82.6
GR-WPI		0.9	23.7	-0.1	8.1	27.1	1.4	27.0	9.5

BANANA

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	6128	6493	7533	7324	7328	9320	11762	12112	14434
WPI	100.0	110.6	115.3	120.6	132.5	146.6	163.0	173.4	210.5
GR-PRICE		6.0	16.0	-2.8	0.1	27.2	26.2	3.0	19.2
GR-WPI		10.6	4.3	4.6	9.9	10.7	11.2	6.4	21.4

MANGO

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	11952	12670	12867	13070	14275	15882	19199	20917	19712
WPI	100.0	95.0	101.9	110.4	151.7	142.0	191.5	237.2	219.7
GR-PRICE		6.0	1.6	1.6	9.2	11.3	20.9	8.9	-5.8
GR-WPI		-5.0	7.3	8.3	37.4	-6.4	34.9	23.8	-7.4

GRAPES

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	17947	19417	20407	14376	15261	18855	20082	16660	14578
WPI	100.0	98.7	109.9	126.5	127.2	124.8	188.9	221.2	195.9
GR-PRICE		8.2	5.1	-29.6	6.2	23.6	6.5	-17.0	-12.5
GR-WPI		-1.3	11.3	15.1	0.5	-1.9	51.3	17.1	-11.5

CASHEWNUT

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	41387	40473	39824	41893	49714	52377	67970	77669	74142
WPI	100.0	106.7	110.6	106.1	117.0	136.6	151.0	192.1	190.6
GR-PRICE		-2.2	-1.6	5.2	18.7	5.4	29.8	14.3	-4.5
GR-WPI		6.7	3.7	-4.1	10.3	16.7	10.6	27.2	-0.8

PAPAYA

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	9217	9032	8891	8633	8889	9025	9067	9707	7071
WPI	100.0	92.1	95.0	110.1	137.1	154.8	189.6	187.0	139.7
GR-PRICE		-2.0	-1.6	-2.9	3.0	1.5	0.5	7.1	-27.2
GR-WPI		-7.9	3.1	16.0	24.5	12.9	22.5	-1.4	-25.3

LEMON

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	9799	11262	13598	12567	14727	18033	19171	18808	17848
WPI	100.0	131.7	165.1	195.0	183.4	164.7	197.5	236.2	216.9
GR-PRICE		14.9	20.7	-7.6	17.2	22.5	6.3	-1.9	-5.1
GR-WPI		31.7	25.3	18.1	-5.9	-10.2	19.9	19.6	-8.2

LITCHI

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	22602	23820	24522	24485	32729	33852	35801	41775	52617
WPI				79.7	77.1	102.7	179.2	119.7	153.0
GR-PRICE		5.4	2.9	-0.2	33.7	3.4	5.8	16.7	26.0
GR-WPI					-3.3	33.2	74.5	-33.2	27.8

ORANGE

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	18799	19922	19826	19608	20778	25874	24309	23400	23376
WPI	100.0	113.3	123.2	113.5	138.3	148.6	185.3	237.4	228.3
GR-PRICE		6.0	-0.5	-1.1	6.0	24.5	-6.0	-3.7	-0.1
GR-WPI		13.3	8.8	-7.9	21.8	7.5	24.7	28.1	-3.8

PINE APPLE

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	8682	8695	8836	11539	11520	12371	13548	15598	17933
WPI	100.0	94.3	97.9	116.3	128.8	154.4	177.9	193.5	233.4
GR-PRICE		0.2	1.6	30.6	-0.2	7.4	9.5	15.1	15.0
GR-WPI		-5.8	3.9	18.8	10.8	19.9	15.2	8.7	20.7

SAPOTA

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	10727	11444	11949	9848	10982	13544	14284	14287	15977
WPI	100.0	101.3	100.4	124.1	116.2	149.0	174.0	209.5	232.8
GR-PRICE		6.7	4.4	-17.6	11.5	23.3	5.5	0.0	11.8
GR-WPI		1.3	-0.8	23.5	-6.3	28.3	16.8	20.4	11.2

GUAVA

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	10079	9834	10177	10814	11416	14177	13012	13926	8968
WPI	100.0	119.9	121.3	120.4	125.2	110.4	177.7	148.3	99.8
GR-PRICE		-2.4	3.5	6.3	5.6	24.2	-8.2	7.0	-35.6
GR-WPI		19.9	1.2	-0.8	4.0	-11.8	60.9	-16.5	-32.7

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the Fruits group are not consistent. Even the direction is not the same and magnitude is too alarming in some cases.

VEGETABLES

BRINJAL

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	7340	7501	8471	10023	10352	10020	11772	13282	14405
WPI	100.0	114.3	116.4	130.5	142.8	139.1	164.7	171.0	186.2
GR-PRICE		2.2	12.9	18.3	3.3	-3.2	17.5	12.8	8.5
GR-WPI		14.3	1.9	12.1	9.4	-2.5	18.3	3.8	8.9

CABBAGE

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	6112	6457	6959	8093	8151	8229	9152	10044	12894
WPI	100.0	127.3	119.5	157.1	168.5	150.7	214.6	211.6	272.0
GR-PRICE		5.6	7.8	16.3	0.7	1.0	11.2	9.7	28.4
GR-WPI		27.3	-6.1	31.5	7.3	-10.6	42.4	-1.4	28.5

CAULIFLOWER

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	11118	10448	11142	13393	12811	13125	14384	15910	16612
WPI	100.0	101.3	97.5	101.5	125.5	124.4	169.9	145.9	153.0
GR-PRICE		-6.0	6.6	20.2	-4.3	2.4	9.6	10.6	4.4
GR-WPI		1.3	-3.8	4.1	23.7	-0.9	36.6	-14.1	4.8

GREEN PEAS

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	10907	11533	12818	12235	14754	15999	16252	17147	18436
WPI	100.0	108.5	99.4	125.7	128.3	127.7	144.9	174.7	182.5
GR-PRICE		5.7	11.1	-4.5	20.6	8.4	1.6	5.5	7.5
GR-WPI		8.5	-8.3	26.4	2.0	-0.5	13.5	20.6	4.4

OKRA

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	9293	10276	10732	11580	12474	13638	14241	16442	16270
WPI	100.0	102.7	115.2	123.3	133.8	145.5	174.8	237.2	232.6
GR-PRICE		10.6	4.4	7.9	7.7	9.3	4.4	15.5	-1.0
GR-WPI		2.7	12.2	7.0	8.5	8.7	20.1	35.7	-1.9

ONION

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	4559	5138	5887	6453	8108	9472	11845	9763	12324
WPI	100.0	126.6	115.9	174.7	177.8	204.3	259.6	186.7	232.5
GR-PRICE		12.7	14.6	9.6	25.6	16.8	25.1	-17.6	26.2
GR-WPI		26.6	-8.5	50.7	1.8	14.9	27.1	-28.1	24.6

POTATO

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	3692	4704	5160	4619	5191	4881	5191	6261	9702
WPI	100.0	118.5	132.6	146.9	110.3	206.2	132.0	129.0	207.0
GR-PRICE		27.4	9.7	-10.5	12.4	-6.0	6.3	20.6	55.0
GR-WPI		18.5	11.9	10.8	-24.9	87.0	-36.0	-2.3	60.5

SWEET POTATO

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	6350	6790	7097	9219	8970	10844	11286	12592	12625
WPI	100.0	114.7	146.5	145.8	148.8	184.7	194.1	206.0	198.2
GR-PRICE		6.9	4.5	29.9	-2.7	20.9	4.1	11.6	0.3
GR-WPI		14.7	27.8	-0.5	2.1	24.1	5.1	6.1	-3.8

TAPIOCA

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	2976	3931	3470	3693	4388	6023	7335	8789	8824
WPI	100.0	95.6	112.8	134.7	159.6	240.8	282.8	285.6	286.9
GR-PRICE		32.1	-11.7	6.4	18.8	37.3	21.8	19.8	0.4
GR-WPI		-4.5	18.0	19.4	18.5	50.9	17.5	1.0	0.4

TOMATO

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	6826	6935	7841	9128	9341	9389	10663	10521	10095
WPI	100.0	119.1	125.6	123.8	153.2	153.6	190.4	184.4	172.3
GR-PRICE		1.6	13.1	16.4	2.3	0.5	13.6	-1.3	-4.1
GR-WPI		19.1	5.5	-1.4	23.8	0.2	24.0	-3.2	-6.6

Growth Rates between all India Average Farm-Harvest price and Wholesale price of the crops in the Vegetables group are not consistent. Even the direction is not the same and magnitude is too alarming in some cases.

LIVESTOCK

MILK

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	13173	13483	14237	15659	17299	19556	22016	25083	27214
WPI	100	101.01	108.98	114.58	123.24	146.41	175.88	194.01	208.05
GR-PRICE	---	2.35	5.59	9.99	10.47	13.05	12.58	13.93	8.50
GR-WPI	---	1.01	7.89	5.14	7.56	18.80	20.13	10.31	7.24

MEAT

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	64757	68915	74853	86581	97849	117247	127541	145921	161093
WPI	100	106.29	112.77	116.37	125.38	151.48	190.13	214.33	244.52
GR-PRICE	---	6.42	8.62	15.67	13.01	19.82	8.78	14.41	10.40
GR-WPI	---	6.29	6.10	3.19	7.74	20.82	25.51	12.73	14.09

POULTRY MEAT (Rs. /000)

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	61006	64678	70597	76420	90925	102756	105575	110725	125193
WPI	100	96.39	101.19	105.78	106.40	117.70	141.16	136.56	156.89
GR-PRICE	---	6.02	9.15	8.25	18.98	13.01	2.74	4.88	13.07
GR-WPI	---	-3.61	4.98	4.54	0.59	10.62	19.93	-3.26	14.89

EGG(Rs. /000)

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	1293	1356	1463	1669	1851	2212	2454	2469	2696
WPI	100	102.12	104.83	119.89	126.47	143.58	165.44	181.79	195.99
GR-PRICE	---	4.91	7.85	14.10	10.94	19.49	10.93	0.62	9.21
GR-WPI	---	2.12	2.65	14.37	5.49	13.53	15.22	9.88	7.81

Growth Rates between all India Average price and Wholesale price of the Livestock products like milk, meat, egg and the Poultry are not consistent. Though the direction is the same except one or two cases but the magnitude is too alarming in some cases.

WOOL

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	51401	54716	58376	63445	64532	68452	70299	73243	77579
WPI	100	97.72	88.50	82.35	76.78	62.17	57.40	57.40	57.40
GR-PRICE	---	6.45	6.69	8.68	1.71	6.07	2.70	4.19	5.92
GR-WPI	---	-2.28	-9.44	-6.95	-6.76	-19.03	-7.67	0.00	0.00

DUNG

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	325	328	356	376	395	430	454	516	578
WPI	100	106.23	108.26	109.32	112.69	118.98	125.89	141.60	151.48
GR-PRICE	---	1.01	8.60	5.51	5.25	8.85	5.50	13.71	11.89
GR-WPI	---	6.23	1.91	0.98	3.08	5.58	5.81	12.48	6.98

FORESTRY

INDUSTRIAL WOOD (Prices in Rs./CM)

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	7587.00	8434	8575	9515	9428.00	9964	9718	12512	12608.00
WPI	100.00	76	84.8	79.6	84.82	98	124.2	132.7	145.30
GR-PRICE		11.16	1.67	10.96	-0.91	5.69	-2.47	28.75	0.77
GR-WPI		-24.17	11.80	-6.17	6.62	15.69	26.61	6.77	9.54

TOF (Prices in Rs./CM)

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	8637.00	9635	11964	10213	11723.00	13026	14673	15246	16721.00
WPI	100.00	76	84.8	79.6	84.82	98	124.2	132.7	145.30
GR-PRICE		11.55	24.17	-14.64	14.79	11.11	12.64	3.91	9.67
GR-WPI		-24.17	11.80	-6.17	6.62	15.69	26.61	6.77	9.54

FUELWOOD (Prices in Rs./MT)

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	8637.00	9635	11964	10213	11723.00	13026	14673	15246	16721.00
WPI	100.00	76	84.8	79.6	84.82	98	124.2	132.7	145.30
GR-PRICE		11.55	24.17	-14.64	14.79	11.11	12.64	3.91	9.67
GR-WPI		-24.17	11.80	-6.17	6.62	15.69	26.61	6.77	9.54

Growth Rates between all India Average price and Wholesale price of the forestry products are not consistent. Even the direction is not the same and magnitude is too alarming in some cases.

FISHERY

MARINE FISH

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	29782	34088	36239	39191	44860	50990	58599	67652	73815
WPI	100.0	103.2	121.0	125.7	145.2	160.5	222.8	246.7	278.8
GR-PRICE		14.5	6.3	8.1	14.5	13.7	14.9	15.4	9.1
GR-WPI		3.2	17.2	3.9	15.6	10.5	38.8	10.7	13.0

INLAND FISH

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PRICE	43541	46194	49838	51977	58486	66084	71854	81572	92132
WPI	100.00	118	108.5	101.4	101.37	153	193.4	250.8	303.68
GR-PRICE		6.1	7.9	4.3	12.5	13.0	8.7	13.5	12.9
GR-WPI		18.1	-8.1	-6.6	0.0	50.6	26.7	29.7	21.1

Growth Rates between all India Average price and Wholesale price of the forestry products are not consistent. Even the direction is not the same in case of Inland Fishery for two years and magnitudes are too alarming in some cases.

Major issues:

Of late, CSO receives the price data from the DES of State Governments. They are often received late and the variation between the data supplied by the DES's and the Ministry of Agriculture for the year 2011-12 are not comparable. There are significant differences, even in major crops, in case of AP, Bihar, MP, Rajasthan, UP and West Bengal. For ready references, the following table could be examined.

Paddy

State	DES Price (Rs./tonne)	Farm Harvest Price(Rs./tonne)	% Difference
Andhra Pradesh	10906	10640	2.5
Bihar	9754	8970	8.7
Madhya Pradesh	11898	12620	-5.7
Rajasthan	14067	13840	1.6
Tamil Nadu	10090	10090	0.0
Uttar Pradesh	10943	10080	8.6
West bengal	9861	9900	-0.4

Wheat

State	DES Price (Rs./tonne)	Farm Harvest Price(Rs./tonne)	% Difference
Andhra Pradesh	11132	NA	
Bihar	13005	10700	21.5
Madhya Pradesh	12826	12790	0.3
Rajasthan	12040	12260	-1.8
Tamil Nadu	5236	NA	
Uttar Pradesh	11769	11050	6.5
West bengal	10520	10520	0.0

Gram

State	DES Price (Rs./tonne)	Farm Harvest Price(Rs./tonne)	% Difference
Andhra Pradesh	27737	35820	-22.6
Bihar	25244	25240	0.0
Madhya Pradesh	25623	34140	-24.9
Rajasthan	39362	34450	14.3
Tamil Nadu	39659	39660	0.0
Uttar Pradesh	36925	32070	15.1
West Bengal	33591	33590	0.0

Tur

State	DES Price (Rs./tonne)	Farm Harvest Price(Rs./tonne)	% Difference
Andhra Pradesh	31021	34630	-10.4
Bihar	32596	32600	0.0
Madhya Pradesh	32072	NA	
Rajasthan	28929	33820	-14.5
Tamil Nadu	32184	32180	0.0
Uttar Pradesh	40603	34520	17.6
West Bengal	48949	NA	

Groundnut

State	DES Price (Rs./tonne)	Farm Harvest Price(Rs./tonne)	% Difference
Andhra Pradesh	38040	36850	3.2
Bihar	26714	55000	-51.4
Madhya Pradesh	24309	30930	-21.4
Rajasthan	31162	32740	-4.8
Tamil Nadu	37220	37220	0.0
Uttar Pradesh	33825	32710	3.4
West Bengal	35739	NA	

Rapseed & Mustard

State	DES Price (Rs./tonne)	Farm Harvest Price(Rs./tonne)	% Difference
Andhra Pradesh	29932	NA	
Bihar	30362	30360	0.0
Madhya Pradesh	23742	32040	-25.9
Rajasthan	34322	33220	3.3
Tamil Nadu	17933	NA	
Uttar Pradesh	33520	31490	6.4
West Bengal	27988	27990	0.0

Kapas

State	DES Price (Rs./tonne)	Farm Harvest Price(Rs./tonne)	% Difference
Andhra Pradesh	37349	36820	1.4
Bihar	45249	NA	
Madhya Pradesh	33920	38760	-12.5
Rajasthan	41512	45030	-7.8
Tamil Nadu	31417	31420	0.0
Uttar Pradesh	88561	41460	113.6
West Bengal	67262	NA	

In view of the large scale differences and delay in receipt of the price data, The Committee is of the view that the price data should be compared with the GR of WPI and abnormal differences noticed if any in the price data then, the GR of WPI should be used. Also in the absence of receipt of price data from any state, the Committee is recommending for the use of GR of WPI over the previous year price of the agriculture commodities.

Summary of recommendations

- **The Committee is of the view that the Farm-Harvest prices of all commodities should be collected at least on regular intervals if not annually. Also they should be made available without considerable time lag.**

- **Growth Rates between all India annual Average price and Wholesale price of almost all the crops, Livestock products, Fishery products and forestry products are not consistent. Even the direction is not the same and magnitudes are too alarming in some cases. This needs special attention and priority to effect corrective measures.**

- **The significant difference noticed between the price data from the DES of State Governments and the Farm-harvest prices should be examined and stages of error should be plucked.**

- **All possible efforts by the Ministry of Agriculture through its DMI to eliminate the price differences between DMI and DES price data should be undertaken immediately.**

- **In view of the large scale differences and delay in receipt of the price data, The Committee is of the view that the price data should be compared with the GR of WPI and abnormal differences noticed if any in the price data then, the GR of WPI should be used. Also in the absence of receipt of price data from any state, the Committee is recommending for the use of GR of WPI over the previous year price of the agriculture commodities.**

Chapter-VII

Fishery Statistics

The '**Fisheries and Aquaculture Sector**' is recognized as the sunshine sector in Indian agriculture. It stimulates growth of number of subsidiary industries and is the source of livelihood for a large section of economically backward population, especially fishermen, of the country. It helps in increasing food supply, generating adequate employment opportunities and raising nutritional level. It has a huge export potential and is a big source of foreign exchange earnings for the country.

The '**Department of Animal Husbandry, Dairying and Fisheries**' is the main authority for development of fisheries' industry in India. It has been undertaking, directly and through the State Governments and the administrations of the Union Territories, various production, input supply and infrastructure development programmes and welfare-oriented schemes; besides formulating and initiating appropriate policies to increase production and productivity in the fishery sector. Further, the 'Ministry of Food Processing Industries' is another main agency responsible for sound growth of fish processing segment in India.

However, fishery is basically a State subject and the primary responsibility for its development rests with the State Governments. The major thrust in fisheries development has been optimising production and productivity; augmenting export; generating employment and improving welfare of fishermen and their socio-economic status.

Over the years, fisheries' industry is growing. This covers both capture and culture including inland and sea, aquaculture, gears, navigation, oceanography, aquarium management, breeding, processing, export and import of seafood, special products and by-products, research and related activities.

Accurate data on assessment of fishery resources, potential in terms of fish production; development of sustainable technologies for fin and shell fish culture; yield optimization; harvest and post-harvest operations; landing and berthing facilities for fishing vessels and welfare of fishermen; etc. is not available.

As regards marine fisheries statistics, sample methodology in use is considered to be satisfactory. There is, however, a need for periodic review of sample size, stratification and intensity of data collection in view of the changes in the pattern of fish landings. There are also problems in the flow of data from States and consequently delay in the compilation of all-India statistics. As far as the deep-sea sector is concerned, though only a small number of licensed vessels are in operation, the data on fish catch do not flow in a regular manner. There is a need to put in place a proper mechanism of reporting for this purpose.

The data on fish production from the inland sector are collected by the State Governments. The resources required for regular data collection are quite large and the cost incurred is not commensurate with the actual volume of fish production. Inland fisheries pose several problems due to the vast and diverse nature of water sources and it is necessary to develop a cost-effective methodology. IASRI is presently engaged in pilot studies in this regard but more concerted effort is urgently called for.

FISHERIES

Value of GDP at Constant Prices(2004-05) (in ₹ Crore)									
Item	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13
GDP	2971464	3253073	3564364	3896636	4158676	4516071	4918533	5247530	5482111
GDP(A&AS)	565426	594487	619190	655080	655689	660987	717814	753832	764510
GDP(Fish)	27152	28749	30650	32427	33315	34395	36400	38473	41222

Share of Fishery									
Item	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13
GDP	0.9	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.8
GDP(A&AS)	4.8	4.8	5.0	5.0	5.1	5.2	5.1	5.1	5.4

Growth Rate									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
GDP		**9.5**	**9.6**	**9.3**	**6.7**	**8.6**	**8.9**	**6.7**	**4.5**
GDP(A&AS)		**5.1**	**4.2**	**5.8**	**0.1**	**0.8**	**8.6**	**5.0**	**1.4**
GDP(Fish)		**5.9**	**6.6**	**5.8**	**2.7**	**3.2**	**5.8**	**5.7**	**7.1**

Value of Output of Fish in Raw Form and Curing Activities at Constant Prices (in ₹ Crore)									
Item	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13
TOTAL GVO	**31989**	**33961**	**35727**	**37728**	**38851**	**39956**	**42206**	**45261**	**47784**
Marine*	**16246**	**17022**	**17988**	**18779**	**18364**	**18505**	**19492**	**21948**	**21549**
Inland**	**15743**	**16939**	**17739**	**18949**	**20486**	**21450**	**22714**	**23313**	**26235**

*Marine fish output is consolidated value of output of (i) Marine fish raw form (ii) Prawn fish raw form and (iii) all curing activity.

**Inland fish output is consolidated value of output of (i) Inland fish raw form and (ii) subsistence fish.

% Share of Fish in Raw Form and Curing Activities at Constant Prices									
Item	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13
Marine	**50.8**	**50.1**	**50.3**	**49.8**	**47.3**	**46.3**	**46.2**	**48.5**	**45.1**
Inland	**49.2**	**49.9**	**49.7**	**50.2**	**52.7**	**53.7**	**53.8**	**51.5**	**54.9**

Value of Inputs (in ₹ Crore)									
Item	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13
R & M AND & INPUTS	**4836**	**5212**	**5077**	**5302**	**5535**	**5561**	**5806**	**6788**	**6562**
MARINE	1657	1724	1722	1854	1963	1947	2060	2058	1978
INLAND	1427	1523	1420	1491	1624	1705	1873	1904	2160
SUBSISTENCE	16	17	18	20	21	22	24	24	27
PRAWNS	1727	1940	1910	1929	1919	1879	1840	2793	2389
SALTING	8	8	8	8	8	8	9	9	9

Input for Fishery

Following Table represents value of input of different components of Fishery sector and its share in Total Input:

Value of Input at Constant Prices (in ₹ Crore)									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
MARINE	1657	1724	1722	1854	1963	1947	2060	2058	1978
INLAND	1427	1523	1420	1491	1624	1705	1873	1904	2160
SUBSISTENCE	16	17	18	20	21	22	24	24	27
PRAWNS	1727	1940	1910	1929	1919	1879	1840	2793	2389
SALTING	8	8	8	8	8	8	9	9	9
Total INPUTS	**4836**	**5212**	**5077**	**5302**	**5535**	**5561**	**5806**	**6788**	**6562**
% Share of Total Input									
MARINE	34.3	33.1	33.9	35.0	35.5	35.0	35.5	30.3	30.1
INLAND	29.5	29.2	28.0	28.1	29.3	30.7	32.3	28.0	32.9
SUBSISTENCE	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
PRAWNS	35.7	37.2	37.6	36.4	34.7	33.8	31.7	41.1	36.4
SALTING	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1

Value of inputs

In the absence of any data based on scientific studies, it has been estimated, after consultation with the SFDs and relevant annual budgets that the operational costs and repairs and maintenance, in the case of marine fish, prawns, inland fish and subsistence fish, **form 22.5 per cent, 22.5 per cent, 10 per cent, and 1 per cent, respectively of the corresponding items' values of output**. For the activity of salting of fish, the inputs are assumed to be 1 per cent of the value of output. Operational costs broadly include expenditure on boats (mechanized and non-mechanized), trawlers, liners, fishing gears, gillnets, trawl nets, cast-nets, traps, other bag-nets, consumption of diesel etc. The value of inputs is estimated at the State level.

In the absence of fresh data and alternative methodology the same input ratio being used at present will be continued. However, CMFRI has been requested to conduct special all India Survey for the estimation of State-wise Input cost for the Marine Fishery sector. As and when supplied, the same input rate would be used for deriving GVA from GVO in the Marine sector. Similarly, for the input ratio in case of Inland Fishery sector, CIFRI has been requested to conduct an All India Survey to estimate the state-wise input costs. As and when supplied, the same input ratio for the Inland Fishery sector would be used.

Summary of Recommendations

- **Special study may be conducted to estimate state-wise the production, price and input costs of high valued Fishes and Cultured Fishes**
- **Based on the availability of data from the special study commissioned, the production, GVO and other parameters may be shown separately for Cultured Fish (Marine), Cultured Fish (Inland), High valued fish and Ornamental fish.**
- **Based on the results of Special surveys being conducted by CMFRI, the input rate may be revised for deriving GVA from GVO in the Marine Fishery sector.**
- **Based on the results of Special surveys being conducted by CIFRI, the input rate may be revised for deriving GVA from GVO in the Inland Fishery sector.**

Chapter-VIII

Forestry Statistics

Forestry in India is a significant rural industry and a major environmental issue. Dense forests once covered India. As of 2010, the Food and Agriculture Organization of the United Nations estimates India's forest cover to be about 68 million hectares, or about 20 percent of the country's area.

In 2002, forestry industry contributed 1.7 percent to India's GDP. In 2012-13, the contribution to GDP dropped to 1.3 percent largely because of rapid growth of Indian economy in other sectors and Indian government's decision to reform and reduce import tariffs to let imports satisfy the growing Indian demand for wood products.

India produces a range of processed forest (wood and non-wood) products ranging from sawn wood, panel products and wood pulp to bamboo, rattan ware and pine resin. India's paper industry produces over 3 million tonnes annually from more than 400 mills, which unlike their international counterparts, mostly uses the more sustainable non-wood fiber as the raw material. Furniture and craft industry is another consumer of wood.

India is the world's largest consumer of fuelwood. India's consumption of fuelwood is about five times higher than what can be sustainably removed from forests. However, a large percentage of this fuelwood is grown as biomass remaining from agriculture, and is managed outside forests. Fuelwood meets about 40 percent of the energy needs of the country. Around 80 percent of rural people and 48 percent of urban people use fuelwood. Unless India makes major, rapid and sustained effort to expand electricity generation and power plants, the rural and urban poor in India will continue to meet their energy needs through unsustainable destruction of forests and fuel wood consumption.

India's dependence on fuelwood and forestry products as a primary energy source not only is environmentally unsustainable, it is claimed to be the primary cause of India's near-permanent haze and air pollution.

Forestry in India is more than just about wood and fuel. India has a thriving non-wood forest products industry, which produces latex, gums, resins, essential oils, flavours, fragrances and aroma chemicals, incense sticks, handicrafts, thatching materials and medicinal plants. About 60 percent of non-wood forest products production is consumed locally. About 50 percent of the total revenue from the forestry industry in India is in non-wood forest products category. Non-wood forest products were a source of significant supplemental income to over 100 million people in India, mostly rural.

Over the last 20 years, India has reversed the deforestation trend. Specialists of the United Nations report that India's forest as well as woodland cover has increased. A 2010 study by the Food and Agriculture Organization(FAO) ranks India amongst the 10 countries with the largest forest area coverage in the world (the other nine being Russian Federation, Brazil, Canada, United States of America, China, Democratic Republic of the Congo, Australia, Indonesia and Sudan). India is also one of the top 10 countries with the largest primary forest coverage in the world, according to this study.

From 1990 to 2000, FAO finds India was the fifth largest gainer in forest coverage in the world; while from 2000 to 2010, FAO considers India as the third largest gainer in forest coverage. Some 500,000 square kilometers, about 17 percent of India's land area, were regarded as Forest Area in the early 1990s.

Significant forest products of India include paper, plywood, sawn wood, timber, poles, pulp and matchwood, fuelwood, sal seeds, tendu leaves, gums and resins, cane and rattan, bamboo, grass and fodder, drugs, spices and condiments, herbs, cosmetics, tannins and other non-wood forest products.

India is a significant importer of forest products. Logs account for 67 percent of all wood and wood products imported into India due to local preference for unprocessed wood. This preference is explained by the availability of inexpensive labor and the large number of productive sawmills. In trade year 2008-2009, India imported logs worth $1.14 billion, an increase of about 70% in just 4 years.

Indian market for unprocessed wood is mostly fulfilled with imports from Malaysia, Myanmar, Cote d'Ivoire, China and New Zealand. India is growing market for partially finished and ready-to-assemble furniture. China and Malaysia account for 60 percent of this imported furniture market in India followed by Italy, Germany, Singapore, the United States, Hong Kong, Sri Lanka and Taiwan.

The Indian market is accustomed to teak and other hardwoods that are perceived to be more resistant to termites, decay and are able to withstand the tropical climate.
Teak wood is typically seen as a benchmark with respect to grade and prices of other wood species. Major imported wood species are tropical woods such as mahogany, garjan, marianti, and sapeli. Plantation timber includes teak, eucalyptus, and poplar, as well as spruce, pine, and fir. India imports small quantities of temperate hardwoods such as ash, maple, cherry, oak, walnut, beech, etc. as squared logs or as lumber. India is the world's third largest hardwood log importer.
In 2009, India imported 332 million cubic meters of round wood mostly for fuel wood application, 17.3 million cubic meters of sawn wood and wood-based panels, 7.6 million metric tonnes of paper and paperboard and about 4.5 million metric tonnes of wood and fiber pulp. Value of output and overall GDP in Forestry Sector is given below:

Value of Gross Domestic Product at Constant Prices (in crores)

Item	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13
GDP	2971464	3253073	3564364	3896636	4158676	4516071	4918533	5247530	5482111
GDP (A&AS)	565426	594487	619190	655080	655689	660987	717814	753832	764510
GDP (F&L)	61640	62742	64795	65697	66932	68877	70509	71816	73864

Share of Forestry

Item	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13
GDP	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.3
GDP (A&AS)	10.9	10.6	10.5	10.0	10.2	10.4	9.8	9.5	9.7

Growth Rate

Item	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13
GDP		9.5	9.6	9.3	6.7	8.6	8.9	6.7	4.5
GDP (A&AS)		5.1	4.2	5.8	0.1	0.8	8.6	5.0	1.4
GDP (F&L)		1.8	3.3	1.4	1.9	2.9	2.4	1.9	2.9

GVO at Constant Prices								(in ₹ Crore)	
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Industrial Wood	2470	2548	2812	2691	2535	2804	2945	2190	2310
TOF	34619	34527	34412	34322	34252	34206	34073	34029	33893
Industrial wood(Total)	**37089**	**37076**	**37224**	**37013**	**36787**	**37010**	**37018**	**36219**	**36203**
Firewood	26195	27788	29380	31193	33074	35118	37159	39527	42183
Minor Forest Products	1849	1644	2379	1918	1928	2058	1646	1748	1748
Fodder	7900	7831	7789	7716	7513	7422	7719	7595	7382
Non Timber Forest Products	**9749**	**9475**	**10168**	**9634**	**9441**	**9480**	**9364**	**9343**	**9130**
Total GVO (Forestry)	73033	74339	76772	77840	79303	81608	83541	85090	87517

% Share in Total GVO of Forestry									
Item	**04-05**	**05-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**
Industrial Wood	3.4	3.4	3.7	3.5	3.2	3.4	3.5	2.6	2.6
TOF	47.4	46.4	44.8	44.1	43.2	41.9	40.8	40.0	38.7
Firewood	35.9	37.4	38.3	40.1	41.7	43.0	44.5	46.5	48.2
Minor Forest Products	2.5	2.2	3.1	2.5	2.4	2.5	2.0	2.1	2.0
Fodder	10.8	10.5	10.1	9.9	9.5	9.1	9.2	8.9	8.4
Non Timber Forest Products*	**13.3**	**12.7**	**13.2**	**12.4**	**11.9**	**11.6**	**11.2**	**11.0**	**10.4**

* Sum of Minor Forest Product and Fodder

The main drawback in the compilation of forestry statistics (as in the case of several other sectors) is the inordinate delay in the availability of data. Except the area under forest cover now being assessed by the biennial RS satellite survey, all the other published data have long time lags. The FSI faces the problem of delayed transmission of data by the States, which tend to accord low priority to the reporting work. Nearly half the States do not furnish the statistics in time, which delays the national compilation.

Data Sources and Methodology:

Industrial Wood From Forest	The data on production and prices of industrial wood from forest are supplied by the State Forest Departments (SFDs).
Industrial Wood outside forest (TOF)	Production is projected on the basis of average annual growth rate of Growing stock of TOF. The average annual growth rate of growing stock observed during 1999-2000 to 2007-08, which is around -0.27%. This growth rate is applied on the production of 2007-08 to estimate production of TOF for the subsequent years.
Fuelwood:	Estimated on the basis consumption of Fuel wood, adjusted for Agricultural by-products used as fuel wood (*of NSS Quinquennial Surveys of Consumer Expenditure, conducted in the NSS 43rd (1987-88), 50th (1993-94), 55th (1999-2000) and 61st (2004-05) Rounds*.) and fuelwood used for funeral and Industries. Prices: by DESs
Non-Timber Forest products(Minor Forest product & Fodder)	The data on production and prices of minor forest products are supplied by the State Forest Departments (SFDs)
Input	15.6 per cent of Value of Output

Non Timber Forest Products (NTFP)

Estimation of Value of Output from Non Timber Forest Products (NTFP) consists of fodder and minor forest products supplied by DES. It is collected by them from various departments like Forest Department, Dept. of Small Scale Industry, Dept. Tribal Welfare, Cottage Industries etc. Data on quantity and producer prices of most of the minor forest products (MFPs) are available from the SFDs. The items of MFPs vary from state to state. The agencies/arrangements for gathering the MFPs are also different from state to state; although data on MFPs is provided by the SFDs have limitations. For some states, data on production and prices are available in respect of some of the important MFPs, whereas for some other states only the royalty value realised is available. The royalty value refers to the collections from the people/right holders staying in the periphery of natural

Fodder from Forest is derived on the basis of the total value of output from Grass, Fodder, Cane trash and 95% of Straw Sticks. Proportion of fodder from forest is arrived at using the state wise ratio given by FSI. This figure is used in forestry estimates. Fodder from Forest sources has been included in the National Accounts Compilation since 2004-05. This item has been included in consultation with Ministry of Environment and Forests as part of Minor Forest Products It has been estimated by Forest Survey of India (FSI) that at national level 15.5% of livestock population is solely dependent on forest areas for fodder/roughages. This proportion has been used to arrive at value of fodder from forest sources.

Trees Outside Forests (TOF)

Estimation of value of output came into practice in recent years from the 2004-05 series. Since Timber from Non- Forest Area is new concept therefore, much information on the Timber from Non- Forest Area is available based on the biennial all India surveys conducted by the FSI..

The methodology followed to estimate value of Timber from Non- Forest Area. This method is based on

- Annual Increment to Growing Stock
- Ratio of production and growing stock of timber in forest (Ratio given by FSI).
- Projection of Production on the basis of average annual growth rate of Growing stock of TOF: *Current methodology* is based on this methodology wherein estimation of Timber from TOF is based on the product of production figure available for 2007-08 based on all India Survey and the average annual growth rate of growing stock observed during 1999-2000 to 2007-08. It was calculated that the average annual growth rate of growing stock observed from 1999-2000 to 2007-08 is around -0.27%. This growth Rate is applied on the production estimated from the survey conducted in the year 2007-08 to estimate production of TOF for the subsequent years.

Fuelwood

The quantity/output of fuel wood is estimated through consumption approach, due to lack of data sources on production of fuel wood. Data on prices are available from State DES's. The estimated production of fuel wood is based on three components, namely

(i) Household fuel wood consumption,

(ii) Agricultural by-products used as fuel wood (this amount is to be subtracted from the total consumption of fuel wood by the

(iii) households, as it is already accounted for in the agriculture sector as by-products) and

(iv) Fuel wood consumed by industries and on funerals.

The estimated value of output of fuel-wood consists of

1. **Total Fuel wood used by House Holds, as per NSS surveys:** The estimation of fuel wood consumption as available from the Quinquennial Surveys of Consumer Expenditure, conducted in the NSS 43rd (1987-88), 50th (1993-94), 55th (1999-2000) and 61st (2004-05) Rounds.

2. **Eliminating Fuel wood from agricultural products:** Subtracting from the household total consumption of fuel wood estimated from NSS data, the actual estimates of value of output of agricultural products (cotton sticks, arhar sticks and jute sticks and whose value of output is already taken into account in the agriculture sector).

3. **Consumption of firewood in the industry and on funerals:**
   (i) The estimate of consumption of fuel wood in the industries for the base year was obtained on the basis of the results of the Enterprise Surveys conducted on various activities by the CSO and the NSSO, and as used in the Input Output Transactions Tables (IOTT). The various industries that consume fuel wood are broadly grouped into 7 industry groups, namely, food products, beverage, tobacco and related products, textiles, paper and paper products, structural clay products, hotels and restaurants and others. The consumption of firewood by these industries is estimated for the base year from the IOTT 1998-99 and 2003-04.
   (ii) The consumption of fuel wood on funerals was estimated making use of the information on (a) distribution of population by different age groups, (b) mortality rates of different age groups and different religions, (c) population projections, and (d) consumption of firewood per funeral. Estimated annual deaths of only relevant religion and age groups were used for deriving the estimated consumption of firewood on funerals.

It is observed that the total firewood consumption under (i) and (ii) above accounts for 6% in value terms of the total consumption of firewood by households from forest sources (net of total household consumption of firewood, estimated from NSS consumer expenditure surveys' data) and agricultural by-products used as fuel by households (cotton, arhar, jute, rapeseed & mustard, sunflower, castor sticks and bagasse) whose value of output has already been taken into account in the agriculture sector. This ratio

built up for the base year is adapted to account for firewood consumed by industries and in funerals, is adopted for subsequent years.

Inputs of Forestry Sector

Material inputs in the forestry sector include expenditure on transportation, water, electricity, fuel, normal repairs and maintenance of the fixed assets etc. In the case of forest areas exploited by the contractors, no separate data on material and non-material inputs are available. However, information on purchases of commodities and services for the upkeep of Government forests and for its exploitation by themselves are available from the budgets of state governments and union territories. On the basis of the analysis of this information, the average ratio of expenditure on the purchase of goods and services and on repairs and maintenance of fixed assets to the total value of output of this of goods and services and on repairs and maintenance of fixed assets to the total value. On the basis of the analysis of this information, the average ratio of expenditure on the purchase of output of this sector is around 15.6 per cent. This norm is utilized for estimating the material inputs in this sector for the series 2004-05.

In the absence of fresh data and alternative methodology the same input ratio will continue. However, FSI has been requested to conduct special all India Survey for the estimation of State-wise Input cost for the Forestry Sector. As and when supplied, the same could be used for deriving GVA from GVO in the Forestry Sector.

Summary of recommendations:

- **Necessary steps by CSO may be taken to ensure timely supply of the data on production and prices of industrial wood from forest by the State Forest Departments.**

- **The state wise ratio given by FSI for estimating the proportion of fodder from forest may be continued.**

- **The current methodology for the estimation of TOF based on the product of production figure available for 2010-11 based on all India biennual Survey conducted by FSI and the average annual growth rate of growing stock may be continued.**

- **Special study may be awarded to collect state-wise price of TOF and inputs costs for TOF**

- **The existing methodology of estimation of fuel wood consumption and deriving of GVO based on the Quinquennial Surveys of Consumer Expenditure, conducted in the NSSO may be continued.**

- **In the absence of fresh data and alternative methodology the same input ratio of 15.6% may be continued. However, if fresh rate made available based on the nationwide survey by FSI, the same could be used for deriving GVA from GVO in the Forestry Sector.**

CHAPTER-IX

Summary of Recommendations

1. **The Sub-Committee is fully endorsing the views and the recommendations of the Prof. A. Vaidyanathan Committee for imbibing professional approach for data collection and processing of Agricultural Statistics through qualified team of professionals so that errors in area enumeration and crop cutting experiments are reduced to the extent possible and the requisite data are made available within a timeframe.**

2. **IASRI should be requested to conduct special study/surveys on Horticulture Statistics to estimate production, Prices and input costs for the important Horticultural crops. Since the percentage share from the Horticulture is increasing, urgent action is required to estimate the state-wise production, price and input cost for the major horticulture crops. This gains importance due to the discontinuance of the Central Sector schemes on Fruits and Vegetables with effect from this financial year (2014-15).**

3. **NAD would make efforts to conduct Special Surveys on estimating input rates for the Fishery Sector with the involvement of CMFRI and CIFRI for both Marine and Inland Fisheries including that of Cultured Fishery Sector and High valued Fishery sector.**

4. **The crop statistics are available only for 41 crops. Efforts should be taken to cover all agricultural crops for bringing out area, yield rate, production, farm-harvest price and input costs so that GVO and GVA are estimated. If some of the crops are not covered annually, the same could be covered periodically say once in**

three years so that the GVO estimates are robust, reliable and directly computed.

5. **Since the percentage share of small millets and other cereals within cereal group and farm sector is insignificant, the existing methodology of estimation of GVO would be continued.**

6. **Unless special surveys are conducted, price data will not be available for each of the pulses crop grouped under other pulses. Data on production is available. Value of Output of Other Pulses is estimated by production multiplied by 85 percent of weighted average price of arhar, urad, moong, masoor, and horsegram. The existing methodology would be continued for estimating the GVO of other pulses. Therefore, the Committee is recommending to conduct special Surveys for these pulse crops to estimate the average weighted price for each growing State at least once in two years.**

7. **Unless special surveys are conducted, price data will not be available for each of these Oil Seeds grouped into others. Data on production is available. The existing methodology can be continued for estimating the GVO of *other Oil seeds.* Therefore, the Committee is recommending to conduct special Surveys for these oil seed crops to estimate the average weighted price for each growing State at least once in two years.**

8. **The contribution of Other Sugar and other fibre crop groups are too insignificant and hence the existing methodology may be continued.**

9. **The value of Toddy production is estimated by multiplying the value of Toddy consumption in rural and urban area in a State by**

respective rural and urban Population. Value of Output of Toddy is estimated at constant price multiplied by WPI growth of Non-Food items. Till new NSSO survey results are made available, the present methodology may be continued.

10. The contribution of other Condiments & Spices crop in the Farm sector is insignificant and hence the existing methodology may be continued.

11. The yield rate of Fodder per hectare for both irrigated and un-irrigated may be continued until a new study results are made available.

12. The existing methodology for the estimation of GVO from Grass would be continued till new NSS survey results are made available. In case new results from NSS 70th round is made available the same may be used.

13. The contribution of miscellaneous food crops and non-food crops to Farm Sector are insignificant and hence the existing methodology for the estimation of GVO may be continued. Value of Output of Kitchen Garden is 0.21% of Net area sown multiplied by weighted average value per hectare of all fruits and Vegetables. The existing rate may be changed based on the results of 70th round NSS survey results or latest Agriculture Census results.

14. Of late, State governments supply production data which are quite differing from the final estimates of the Ministry of Agriculture. The reason being stated is that the State Goverments revises the data even after final estimates were released by the

Ministry of Agriculture, GOI. Ministry of Agriculture should be apprised of the importance of freezing of the estimates once finalized by it. No further changes should be considered.

15. There should be systematic and scientific efforts to collect horticulture data fully on 244 horticultural crops including production, yield rate, area, input costs and related details.

16. Due to rising share in GVO of Horticulture Sector, Horticulture activities may be considered as significant segment of agrarian activities and hence should be brought part of Agriculture Census and Surveys

17. Apart from area, and production data, there is need to collect reliable data on Inputs, Prices, Imports, Storage facilities, Market facilities, exports, etc.,

18. Multiple agencies involved with wide differences in their estimates and no cross validation mechanism existing. There should be nodal agency in the Ministry of Agriculture to consolidate the data on production, area, yield rate, input costs, etc. both at state level and at National level.

19. Value of output of Other-Vegetables is estimated by multiplying Production with weighted average prices of all vegetable crops for which separate data is available for estimating the GVO of Other Vegetables(Beans, Bitter gourd, Bottle guard, Capsicum, Carrot, Cucumber, Muskmelon, Radish, Parwal, Pumpkin and Watermelon). There should be nation-wide survey to estimate average price of these vegetable crops at state level. Till then, the existing methodology may be continued.

20. Value of output for Other Fruits (Amla, Ber, Custard Apple, Kiwi, Passion Fruit, Peach, Plum, Pomegranate, Strawberry, etc.) is estimated by multiplying Production with weighted average prices of all fruits for which separate data is available. There should be nation-wide survey to estimate average price of these fruit crops at state level. Till then, the existing methodology may be continued.

21. The Integrated Sample Survey (ISS) conducted by the Department of Animal Husbandry need to expand it coverage to include Camel and Sheep Milk, Duck Egg for all the states, Goat Hair, Camel Hair and Pig Bristles.

22. There is also need to cover the Unregistered Sector for meat and animals slaughters, Meat Product (Heads and Legs, Fats from Slaughter and Fallen Animals) and Meat By-product (Hides and Skins).

23. Special surveys need to be conducted to estimate inputs of livestock sector i.e. Feed of Livestock, Market Charges and Operational Cost, etc. at state level. This is important to derive GVA for the Livestock sector.

24. The Rates and Ratios obtained by CSO through National Meat Research Centre may be considered in place of the existing Rates and Ratios.

25. Seed rates (quantity per hectare) are available from the *Cost of Cultivation Studies* (CCS) and the State Agricultural Departments only for the principal crops and some minor crops. Special studies required to be conducted to supplement CCS to

cover other crops as well so that the overall input costs on seed usage is captured.

26. The estimates of consumption of chemical fertilizers are based on the material wise consumption of chemical fertilizers, as per *'Fertilizer Statistics', a publication of Fertilizer Association of India*. The same may be continued.

27. For estimation of value of input as dung manure, the present method based on evacuation rate and utilization rates of Dung for manure may continue until alternative rate are made available through special surveys.

28. The existing method for Animal feed of roughages consisting of fodder, cane trash and grass and 95 per cent of production of by products (stalks and straws) in the agriculture sector considered to be consumed by livestock population would be continued taking into account the adjustments for the consumption of animals not used in agriculture sector(viz., bullocks, horses, camels etc., mainly used for non- agricultural purpose such as transportation etc..) and fodder from forest and some percentage of fodder from Non Forest.

29. The rate of concentrates for different animals are Cattle/ Buffalo is Rs. 685.26, Sheep/ Goat/ Pigs is Rs.164.82, and Poultry is Rs. 121.38 based on the Cost of Cultivation Studies and corroborated by special studies by State DES's would be continued.

30. Annual data on irrigation charges payable to the *government from the States*, consolidated from the respective irrigation departments based on the budget analyses would be continued.

31. Market charges based on the Special studies conducted by the Ministry of Agriculture may be continued to use till new results are made available.

32. Data on electricity consumed for agricultural purposes and its corresponding price per unit supplied by the *Central Electricity Authority (CEA)* on an annual basis at state level would be continued to be used.

33. Estimates of consumption of pesticides and insecticides both in terms of quantity and value supplied by the *Directorate of Plant Protection and Quarantine, Ministry of Agriculture*, would be continued to be used.

34. The existing method of consumption of diesel oil based on the number of tractors and diesel engines estimated through the *Indian Livestock Census (ILC) in* use and per unit consumption of diesel oil based on CCS would be continued. Whenever the new results are made available by the Livestock Census and CCS, the same would be substituted.

35. The existing method of estimation of expenditure on current repairs and maintenance based on *All India Debt and Investment Survey (AIDIS) would be continued.*

36. Though some of the items of inputs are estimated with the results of cost of Cultivation studies, efforts should be taken to cover more items and make use of the analysed results for compilation and cross validation. This is more so when the plot level data are made available for about than 10 years. Time series analyses can also be on various inputs so analysed from the plot level data of the CCS.

37. The Committee is of the view that the Farm-Harvest prices of all commodities should be collected at least on regular intervals if not annually. Also they should be made available without considerable time lag.

38. Growth Rates between all India annual Average price and Wholesale price of all most all the crops, Livestock products, Fishery products and forestry products are not consistent. Even the direction is not the same and magnitudes are too alarming in some cases. This need special attention and priority to effect corrective measures.

39. The significant difference noticed between the price data from the DES of State Governments and the Farm-harvest prices should be examined and stages or error should be plucked. All possible effort by the Ministry of Agriculture through its DMI to eliminate the price differences between DMI and DES price data should be undertaken immediately.

40. In view of the large scale differences and delay in receipt of the price data, The Committee is of the view that the price data should be compared with the GR of WPI and abnormal differences noticed if any in the price data then, the GR of WPI should be used. Also in the absence of receipt of price data from any state, the Committee is recommending for the use of GR of WPI over the previous year price of the agriculture commodities.

41. Special study may be conducted to estimate state-wise the production, price and input costs of high valued Fishes and Cultured Fishes

42. Based on the availability of data from the special study commissioned, the production, GVO and other parameters may

be shown separately for cultured fish (marine), Cultured Fish (Inland), High valued fish and Ornamental fish.

43. Based on the results of Special surveys being conducted by CMFRI, the input rate may be revised for deriving GVA from GVO in the Marine sector.

44. Based on the results of Special surveys being conducted by CIFRI, the input rate may be revised for deriving GVA from GVO in the Marine sector.

45. Necessary steps by CSO may be taken to ensure timely supply of the data on production and prices of industrial wood from forest by the State Forest Departments.

46. The state wise ratio given by FSI for estimating the proportion of fodder from forest may be continued.

47. The current methodology for the estimation of TOF based on the product of production figure available for 2010-11 based on all India biennial Survey conducted by FSI and the average annual growth rate of growing stock may be continued.

48. Special study may be awarded to collect state-wise price of TOF and inputs costs for TOF

49. The existing methodology of estimation of fuel wood consumption and deriving of GVO based on the Quinquennial Surveys of Consumer Expenditure, conducted in the NSSO may be continued.

50. In the absence of fresh data and alternative methodology the same input ratio of 15.6% may be continued. However, if fresh

rate is made available based on the nation-wide survey by FSI; the same could be used for deriving GVA from GVO in the Forestry Sector.

Annexures

No.M-11016/5/2013-NAD-9
Ministry of Statistics and Programme Implementation
Central Statistics Office
National Accounts Division

Sardar Patel Bhawan, Sansad Marg,
New Delhi-1 Dated: September 11, 2013

ORDER

Subject: Sub-Committee on Agriculture and Allied Sectors

With a view to revise the base year of National Accounts Statistics from 2004-05 to 2011-12, it has been decided to constitute a sub-committee of the Advisory Committee on National Accounts Statistics (ACNAS) to review the existing methodology for estimation of GVA from Agriculture & Allied Sectors. The composition of the sub-committee on Agriculture and Allied Sectors is as under:

Composition of the Sub-Committee:

Chair Prof S. Mahendra Dev, Director, IGIDR, Mumbai (Non- Official)

Co-chair Shri Pratap Narain (Non- Official)

Members
1. Dr.J.V.Meenakshi, Delhi School of Economics, Delhi (Non-Official)
2. Prof S. Bhide, NCAER, New Delhi (Non- Official)
3. Shri Ashish Kumar, ADG, NAD, CSO (Official)
4. DDG(Coordination), NAD, CSO (Official)
5. Dr.S.Durai Raju, DDG, NAD, CSO (Member Secretary, Official)

Terms of Reference :

(i) Review present system of compilation of GVA in Agriculture sector and its sub sectors including livestock, forestry, fisheries;

(ii) Examine results of
   a. type studies carried out by the Division in this context.
   b. NSS survey on land holding etc.
   for their adoption in compilation of estimates;

(iii) Examine availability and use of data generated from Cost of Cultivation Studies;

(iv) Identify additional data requirement for preparation of sub-sector-wise estimates; and
(v) Suggest revised/update methodology for compilation of these estimates.

2. The sub-committee shall submit its report by the end of six months from the date of its constitution. The sub-committee may co-opt any member, if necessary, for dealing with specific issues relating to the subject. The non-official Members would be paid a sitting fee of Rs. 1,000/- per day and DA/travel costs as per their eligibility in the organisation to which they belong (in case they are in service) or the last post occupied (in case they are retired), in accordance with Appendix 2 to SR 190(A). The travel costs in respect of official Members would be borne by the respective Organisations.

3. The expenditure will be debitable to the respective minor heads under the following heads:

Major Head-"3454" Census, Survey and Statistics
Sub Major Head-02 Survey and Statistics
Minor Head-02.204 Central Statistical Organization

of Plan Scheme "Capacity Development of SPI" under Grant No: 91 of this Ministry during the Financial Year 2013-14.

4. This issues with the concurrence of AS & FA (S&PI) vide Dy. No. 856/AS&FA dated 9.9.2013.

Sd./
(G. Vaidheeswaran)
Under Secretary to the Govt. of India

Copy to:

1. Chairman and members of the Sub-Committee
2. DDG, National Statistical Commission
3. Admn.I/II
4. Cash & Accounts Section
5. Budget & Finance/ General Section
6. PPS to CSI & Secretary, Ministry of Statistics & PI
7. PPS to DG &CEO, NSSO

Minutes of the first Meeting of the Sub Committee
On Agriculture and Allied Sectors
* * * * * * * *

The first meeting of the Sub Committee on Agriculture and Allied Sectors was held on 21st November, 2013 at 2.30 p.m. in Room No. 223(2nd floor), Sardar Patel Bhawan, New Delhi under the Chairmanship of Prof. S. Mahendra Dev, Member, NSC. At the outset, the Chairman welcomed all the participants and informed participants the background information on the constitution of this Sub-Committee. He then, requested the Member Secretary to make a presentation on the current methodology of compilation of GDP in Agriculture and Allied Sectors. The list of participants is given at Annexure.

Member Secretary gave a brief introductory remark on the objective of constitution of the Sub Committee and stressed its important role for the base-year revision exercise. Since the base year for the National Accounts Statistics (NAS) will be revised from the current base-year of 2004-05 to 2011-12 and the NAS would adopt the revised base year from the year 2015. Therefore, the primary role of the Sub Committee is for the examination of the current methodology, Rates and Ratios being presently used and other issues so that a new methodology could be devised and rates and ratios could be updated/revised. These exercises and the inputs of this Sub-Committee will help and facilitate the smooth changeover process from the current base year of 2004-05 to the proposed new base year of 2011-12. Also Chairman reiterated the same and he illustrated how this Sub Committee and its terms of reference are different from that of the Expert Committees constituted under the Chairmanship of Prof. A. Vaidyanathan and Dr. Y.K. Alagh.

The Member Secretary had made a detailed presentation on the current methodology followed in the compilation of GDP in the agriculture sector including that of livestock, fishery and forestry sector. The presentation covered various aspects of compilation techniques, source agencies for the data and time lag involved in getting the requisite data. In each of the sub-sectors namely Agriculture, Livestock, Forestry and Fishery how the data flows on production and prices from the source Agencies, when the Rates and Ratios last revised, issues involved thereon, etc. were presented and discussed. Due to non-availability of separate data on the input consumption for the Livestock sector and the relative difficulty in bringing out separate GVA for the Livestock Sector was explained. Various publications and the Statements in the NAS showing the GVO, GVA and input were presented.

After the presentation was over, Shri Pratap Narayan, Co-chair of the Sub-Committee made the following observations:-

(a) This Sub Committee should take up the matter relating to quarterly estimates and advance estimates besides the annual estimates.
(b) Capital formation and Investment in agriculture sector should also be dealt by this Committee
(c) Aquaculture and all activities relating to it should be covered in the fishery sector.
(d) Though the CSO made its presentations on the current methodology of compilation of GDP and its view points, the views of other organisation particularly the data provider viz., Ministry of Agriculture should also be heard by this Committee.
(e) This Committee should also take into account the food and agriculture situation in the country keeping in mind the food security bill.

Member Secretary informed the Committee that the estimates and compilation techniques of quarterly and advance estimates are different from that of methodology followed for the compilation of annual / quarterly estimates in the agriculture sector since quarterly and advance estimates are primarily driven by indicators method whereas annual estimates are driven by actual data. Therefore, this Committee will not be in a position to consider quarterly and advance estimates. Regarding capital formation in the agriculture sector, it was informed in the Committee that there is a separate Sub Committee which would be dealing with subjects like savings and capital formation and hence this would be outside the purview of terms of reference of this Sub Committee. Regarding inclusion of aquaculture in the fishery sector and after detailed discussions and clarification, it was informed that aquaculture is already being taken into account in the compilation of GDP from the fishery sector. To get the views of the data supplier, it was agreed that concerned officers should be requested to make a presentation on the domain of the subject during the next meeting. With regard to food security and National Food Security Bill, it was informed that the same subject was dealt already by Prof. Alagh Committee and hence this will be outside the scope of this Committee. Further, the terms of reference of this Sub Committee had been once again reiterated.

On the issue of significant differences noticed in the production data, Shri Rajiv Lochan, Advisor (Agriculture Statistics), DES detailed the procedure adopted in the compilation of Agricultural production data in the M/o Agriculture. Also informed that by December, the final estimates for the preceding Agriculture year get finalized. With regard to 17 Minor crops, he told the Committee that the Horticulture Division has been entrusted to supply the data since 2008-09.

One of the main issues of time lag in getting data from the source agencies, particularly data relating to cost of cultivation studies (having a time lag of 2 – 3 years) was raised. Also, non-availability of data on consumption of diesel oil from the cost of cultivation studies was raised in the meeting. Shri T.K. Dutta, Advisor

(CCS), Ministry of Agriculture informed that the relevant data is available in the cost of cultivation studies under different head (machine-labour) and hence the same could be used after proper analysis. Regarding making timely availability of cost of cultivation studies, he further informed the Committee that the requisite window based analytical software is under development and hence the data would be processed and the relevant data would be made available as soon as the software gets operationalized. This will reduce the time lag in supplying the data.

On the issue of time lag in getting data relating to land use statistics, Dr Vidya Dhar, Advisor & Agricultural Census Commissioner informed that there has been a considerable improvement in providing Land Use Statistics and his office is in the effort of reducing the time lag further in respect of land use statistics.

Prof. Bhide informed that data relating to meat groups has to be checked since the export data is not in conformity with the production data. Further, he discussed about gur production and the methodology adopted in the compilation. Prof. Bhide further stressed that the contribution of such items where rates and ratios have been used due to non-availability of detailed data, its contribution of GVA / GDP within the group item and to the overall GDP of agriculture should be worked out. This would give an idea on the extent of focus required on those items and will help in deciding to revise the rates and ratios.

Member Secretary has explained that the CSO is apportioning the sugarcane production into sugarcane used for crushing and other miscellaneous uses of sugarcane like seeding, chewing and khandsari etc. in the miscellaneous category. Based on the benchmark survey, respective prices are used on the apportioned part of the sugarcane production to get the value of output. Since prices differ considerably, different price mechanism has been used on the apportioned part of sugarcane production. This procedure would not only avoid duplication but gives closest value of output for the sugarcane production.

Smt. P.R. Ananthalakshmi, Addl. Director, DES, Govt. of Tamil Nadu has opined that the Livestock sector and Horticulture sector are important and therefore, there should be a separate mechanism for input data namely feed, repair & maintenance, FISIM and market charges separately for livestock sector. This would help in getting separate GDP for livestock sector. She also informed that the horticulture sector is also important since there is no expansion in agriculture during the last decades and therefore, horticulture gets more priority due to its fast growth. In view of this, some of the State Governments like Tamil Nadu look for separate data on horticulture statistics. Further, she had pointed out that GVO for adult fowls killed in an un-organised sector is not being taken. A proper study could be devised to work out on the fowls killed in the un-registered / un-organised sector. Also, the State Governments find it very difficult to get price of timber and other forest products as there is no regular mechanism of selling the timber in the State Forest

Depots. The State Forest Departments resort to auctioning the timber as and when to do so by the pressure groups. Therefore, due to huge pressures from various stakeholders and timing of auctioning of the timber products, the auction-prices of timber do not depict the ground reality.

To the query raised on input data in fishery sector, it was informed that CSO is exploring the possibility of getting updated information on input data by awarding special survey to CMFRI for marine fishery and CIFRI for inland fishery.

Regarding prices relating to trees outside forest, CSO informed that there is no regular mechanism to get price data for this segment. Special efforts need to be taken to get this issue addressed.

Shri Ashish Kumar, ADG(NAD), CSO informed that prices relating to non-timber forest products would be difficult since the mechanism of sale of non-timber forest product through State Forest Departments has been done away with. The local tribal population has been assigned to sell these minor forest products and the production and price data will not get through the State Forest Departments. Therefore, a suitable mechanism has to be devised to collect production & price data relating to non-timber forest products on regular basis.

Other Issues:

Estimation of minor crops mainly small millet, other pulses etc depend upon quite old rates & ratios. Sub-committee is of the view that a comparative study for these crops needs to be done to assess its importance by way of its share in the total agriculture output.

Horticulture data has always remained a matter of concern since there is no regular mechanism to collect data covering all the horticultural crops of about 244. Central sector scheme on fruits and vegetables would be discontinued from the next year. Mrs. Arundhati, Director, M/o Agriculture expressed the usefulness of the pilot study on Horticulture Statistics. The horticulture data, especially collection part, requires immediate attention. Therefore, a financial support for the pilot study proposal submitted by IASRI in the lines of study done for the state of Maharashtra and Himachal Pradesh, forwarded by the Office of Horticulture Unit, M/O Agriculture would be informative and useful. ADG (NAD) informed the Committee that a suitable methodology should be devised based on the pilot study conducted and a comprehensive proposal to collect data on Horticulture Statistics would be useful to the NAD. The Committee decided that in the next meeting of the Sub-Committee, IASRI would be invited to make presentation on their proposal relating to the Horticulture Sector.

Data supplying Departments of M/o agriculture, viz.., Agriculture, DADF, Horticulture etc. would be asked to make presentations on the data collection and uses of the results of CSO in the next meeting.

After the detailed presentations and discussions, the decision of the first meeting of the Sub Committee is summarized below:

1. It was decided to include one more state in the Sub-Committee as co-opted member, besides Tamil Nadu.
2. Data providers namely Advisor (Agriculture Statistics), Advisor (AHD), Advisor (Horticulture) and Advisor (Fishery) would be requested to make presentations. The presentation would cover the data collection, issues thereof and uses of final output of CSO on the subject domain.
3. NAD would prepare and share the percentage share of GVO of various estimates within the group and overall GVO in the sector for those items where Rates and Ratios have been used.
4. IASRI would be requested to make the presentation on the proposed study on Horticulture Statistics to estimate production and Prices of various Horticultural Products.
5. NAD would make efforts to have input rates for the Fishery Sector with the involvement of CMFRI and CIFRI.
6. The next meeting would be held during mid-February, 2014 on the afternoon of second day of the NSC meeting. The exact date would be intimated later.

The meeting ended with a vote of thanks to the Chair and all the Special invitees.

Annexure

1. Prof. S. Mahendra Dev, Director, IGIDR, Mumbai- Chairman
2. Shri Pratap Narayan, Former FAO Expert & Co-chair,
3. Shri Ashish Kumar, Addl. DG, NAD, CSO, MOSPI
4. Prof. S. Bhide, NCAER, Delhi
5. Shri Rajeev Lochan, Advisor,DESAg, M/o Agriculture
6. Shri T. K. Dutta, Advisor,DESAg, M/o Agriculture
7. Dr. Vidya Dhar, Advisor & Agriculture Census Commissioner, M/o Agriculture
8. Smt.P.R.Ananthalakshmi, Addl. Director, DES, Govt. of Tamil Nadu
9. Smt. P. Bhanumati, Director, NAD, CSO, MOSPI
10. Smt. Arundhati Singh, Director, Horticulture, M/o Agriculture
11. Shri Kumar Sundaram, Dy. Director, NAD, CSO, MOSPI
12. Shri Pramod Kumar, Asst. Director, NAD, CSO, MOSPI
13. Shri B B Sharma, SSO, NAD, CSO
14. Smt. Biju Cyriac, SSO, NAD, CSO
15. Shri R R Pandey, SSO, NAD, CSO
16. Dr. S. Durai Raju, Dy. DG, NAD, CSO, MOSPI – Member Secretary

Minutes of the second meeting of the Sub-Committee on Agriculture and Allied Sectors held on 18th February, 2014

The second meeting of the Sub Committee on Agriculture and Allied Sectors was held on 18th February, 2014 at 3.00 p.m. in Room No. 223(2nd floor), Sardar Patel Bhavan, New Delhi under the Chairmanship of Prof. S. Mahendra Dev, Member, NSC and Chairman of this Sub-Group. At the outset, the Chairman welcomed all the participants and asked the member Secretary to start the proceedings as per the Agenda. The Member Secretary started the proceedings with a brief remark on the list of the presentations and requested the concerned officer to make a presentation on the methodology used in compiling the production data, time frame, the revision schedule along with the validation checks, if any. As mentioned in the agenda of the meeting he then, requested the concerned officer dealing with the subject to give a brief presentation and issues thereof pertaining to the subject in that order. The list of participants is given in the Annexure.

(a) Crop Statistics and issues thereof:

Shri Rajeev Lochan, Adviser, DES, Ministry of Agriculture gave a detailed presentation on the system of data collection, release calendar and the various problems being faced. He covered the system of release of estimates by Government of India and the release calender for four advance estimates and the final estimates at the national level. Under this crop calendar, 27 crops are being covered. He further briefed upon the validation checks that are being carried out with other estimates and inputs available from time to time. He then concluded with the latest production figures particularly referring to the final estimates of food grain production for the year 2012-13 and 2nd Advance estimates for the year 2013-14.

Some of the issues were discussed, notable among them are: (i) time schedule for the release of production data by the States and strict compliance thereof by them; (ii) steps to narrow down the variations in area and yield estimates and (iii)

expansion of crop coverage from the present system of coverage of 27 major crops and 3 other horticultural crops to some more crops as far as possible so that some of the State specific important crops are brought under main stream of data collection.

ADG (NAD) has also suggested the strict adherence of release calendar for the release of crop statistics and that periodic monitoring of such release should be undertaken by the nodal Ministry. Shri Rajeev Lochan has informed that the final estimate is brought up after six months and there has been a process of reconciliation with concerned States. Hence there should not be any variation in the final estimates released by the Government of India and the estimates supplied by the State Governments to CSO. He also insisted that CSO should get such finalized data from the DES of the States.

Smt. Ananthalakshmi, Addl. Director, DES, Govt. of Tamil Nadu informed that there is a difference of 20-40% between second advance estimates and the final estimates. Shri Rajeev Lochan replied that proper validation is being done for each State. However, he insisted that officers from State as well have to be serious enough so that the production estimates are not revised significantly and also informed that an objective validation exercise is a necessary by the State Government as well before sharing the data at national level. For bringing down inconsistencies and variations in the estimates, ADG (NAD) requested that the final estimates and also the fourth advance estimates should be shared with the State Governments. It was informed that final estimates are being shared with the State Governments and an attempt would be made to share fourth advance estimates with the State Governments. With regard to the expansion of the coverage of crops, it was informed that infrastructure and logistics have to be expanded adequately and strengthened to meet this requirement. ADG, NAD suggested that DES, Govt. of India should attempt an exercise to know whether crop expansion is required or not. If so, the list of such crops should be intimated to CSO.

(b) Cost of Cultivation Scheme:

A presentation on comprehensive scheme for studying the cost of cultivation of principle crops in India was made by Shri Chander Kant, Additional Statistical Adviser, DES, Ministry of Agriculture. This is a central sector scheme running since 1970-71 with the objective of generating area-wise, crop-wise and state-wise cost of cultivation and cost of production estimates. For the block of 3 years (2011 – 14), 8400 operational holdings were selected under this scheme. This is being implemented in 14 states and 26 crops are covered. About 155 crop estimates are being made for the 26 crops and the time lag in release of data is about 2 yrs. Plot-wise unit level data is made available after 3 years. Though the primary objective of the scheme is to supply requisite data for recommending Minimum Support Price (MSP) by CACP, CSO uses input costs of feed, seed and diesel from this survey results. Further, time lag needs to be reduced for making effective use of this data. For the Chairman's query on the classification of various input costs it was informed that a balancing has to be checked particularly for seed, feed for livestock and self-consumption/wastage. It was also informed that the balancing would be taken care when supply-use table and IOTT table are generated.

(c) Agricultural Price Statistics:

Smt. Rugmini Parmar, Adviser (Economics), DES, Ministry of Agriculture made a presentation on the prices of agricultural commodities. She informed that the data source on agricultural prices are many namely (i) Directorate of Economics and Statistics; (ii) Directorate of Marketing Intelligence (DMI) and (iii) National Horticultural Board for horticultural commodities. She informed that wholesale prices of 154 agricultural commodities on weekly basis from the designated 700 market centres across the country are selected. Further, she also added that wholesale prices of 80 agricultural commodities from 153 market centres are collected and supplied to the office of Economic Adviser for release of wholesale price index. The data collection on the retail prices of 88 essential commodities from 87 market centres spread over the country on weekly-basis besides the farm harvest

prices of 36 commodities from 30 states and UT's were presented. She clarified to a query that wholesale price and the farm harvest price are different and that state wise market arrival information is not available. Also she informed the practical difficulty in capturing price variations between the varieties and between the crops. To release state average price for a particular commodity, it was informed that a weighted average price of a commodity with district production as weight is taken. With regard to coverage and timely release of price data, it was informed that price data collected are being sent by post even today and therefore it is difficult to release price data in time. Also reported that there are irregular and delayed reporting of price statistics from the State besides duplication in data collection by different agencies (DES, Agmarket, others) and lack of uniformity in quality, unit and time.

(d) Horticultural Statistics and issues thereof:

Dr. Mamta Saxena, Adviser (Horticulture), Ministry of Agriculture made a presentation on horticulture covering the status of horticultural statistics, challenges, opportunities and milestones achieved in the recent past. She informed that the National Horticultural Mission (NHM) programme operation was carried out in 344 districts in 18 states and UT's. One third of GDP from agriculture is accounted from Horticulture. She also explained that multiple agencies are involved in collection and compilation of data and also variations between them.

She has explained that 4 estimates (1st advance estimates, 2nd advance estimates, 3rd advance estimates & final estimates) are released for horticulture crop groups. She listed that the production share of vegetable is 60%, fruits 30% and the remaining is from plantation groups, spices, flowers and aromatics. Many issues like lack of effective institutional mechanism, absence of data validation mechanism, absence of coordination and inadequate use of modern information technology were discussed. She stressed upon crop specific and state specific methodology for proper estimation of production of horticultural crops. Some of the issues like input costs for horticultural crops, scientific methodology for horticultural crop estimation and horticultural information system were also discussed. Further, a request was

made to the Committee to consider a pilot project on the estimation of horticultural crops by IASRI. Since horticulture contributes about 30% of the GDP in agriculture, the Chairman stressed that proper scientific methodology should be in place to get quality data in time.

(e) Livestock statistics:

Shri S.K. Das, Adviser (Stat.), Department of Animal Husbandry, Dairying and Fisheries (DADF), Ministry of Agriculture made a presentation on livestock with a special emphasis on Livestock Census and Integrated Sample Survey (ISS) for the estimation of livestock products. He discussed about the periodicity of the Integrated Sample Survey (ISS), sampling methodology and sample size for estimating milk, egg, wool and meat. Regarding sampling for milk estimation, it was informed that only eligible household are selected and actual observation is made twice a day. With regard to quality and time lag, it was informed that efforts are being made to reduce the time lag and improve quality of livestock statistics. With regard to input cost estimates for this livestock product, the Adviser informed that these are being collected and a brief note would be sent on the input cost for production of milk, egg, meat and wool.

(f) Fishery statistics:

Shri O.P. Mishra, DDG, DADF, Ministry of Agriculture made a presentation on fishery sector. He covered fishery resource of both marine and inland and export statistics. Historical data on fishery sector besides important initiatives taken were discussed. Fishery institutes/organisations and their functions were also discussed. Further, scheme on strengthening of data base and Geographical Information System (GIS) for fishery sector, the methodology for data collection for inland fishery and marine fishery were discussed. Some of the constraints like untrained manpower for data collection, shortage of manpower, poor awareness among the fishermen were informed. With regard to coverage on aquaculture, it was informed that they are being covered under marine sector. To a query on fishermen awareness programme, it was replied that various media are used to make the fisherman aware

of the risks due to weather and other natural calamities including cyclone warning. To a query on the release of advance fishery statistics, it was replied that quarterly and annual estimates are supplied but no advance estimates are made for fishery sector.

(g) Forestry Statistics:

Shri Prakash Lakhchaura, Director, FSI, Dehradun made a presentation on the forest sector and issues in the compilation of GDP. Special emphasis was made on Trees outside Forest (TOF) and minor forest products with a special reference to fodder in the forest. He described the methodology for compiling inventory of TOF for both rural and urban sector and the scientific sample designs designed to cover different types of TOF, resources like trees in villages, woodlots, trees in agro forestry, scattered trees, trees in compact block, trees along railway line, trees along roads, trees on bunds of farm, trees in urban areas. He also presented estimated production of TOF state wise. Some of the issues like un-recorded production from forest, non-timber forest products, and price of timber for TOF and NTFPs and input costs were discussed.

(h) Pilot studies on Horticultural Statistics:

Dr. K.K. Tyagi, Principal Scientist, IASRI Delhi & Dr. Touqeer Ahmad, Senior Scientist, IASRI Delhi made a presentation on the pilot study for the estimation of horticultural crop production and discussed many challenges thereof. The divergence between the National Horticultural Board (NHB) and DES, States on the estimates of horticultural statistics was also discussed. They presented the existing sample design and the proposed sample design and the advantages and cost effectiveness of the new sampling design. Besides sampling design, the work involved and the responsibility of different organisations in administering the project spread over 4 years were also discussed. Since there is no uniform methodology for estimating the production of horticultural crops and prices thereof, the need of an alternate methodology was stressed. Therefore, any scientific methodology which helps in proper data collection and bringing out state wise estimates on fruits and vegetables, the CSO would recommend and support. However, the duration of the

project/proposal has to be one year coinciding with the agricultural year and the sampling design and data collection methodology should be very simple, scientific and practically adoptable. The design should cover as far as possible major fruits and vegetables and produce reliable estimates for the States. CSO would fully support such proposal.

The meeting ended with a vote of thanks to all the participants and particularly the officers who made the presentation on various subjects.

A N N E X U R E

1. **Prof. S. Mahendra Dev,** Director, IGIDR, Mumbai- **Chairman**
2. Shri Ashish Kumar, Addl. DG, NAD, CSO, MOSPI
3. Prof. S. Bhide, NCAER, Delhi
4. Prof. J.V Meenakshi, DSE, Delhi
5. Shri E. Dasarathan, DDG(PCL), CSO, MOSPI
6. Smt.P.R.Ananthalakshmi, Addl. Director, DES, Govt. of Tamil Nadu
7. Shri Rajeev Lochan, Adviser(Agri. Stat.), DESAg, M/o Agriculture
8. Dr. Mamta Saxena, Adviser(Horticulture), M/o Agriculture
9. Smt. Rugmini Parmar, Adviser(Economics), M/o Agriculture
10. Shri S. K. Das, Adviser(Stat.), DADF, M/o Agriculture
11. Shri, O.P. Mishra, DDG(Fishery), DADF, M/o Agriculture
12. Shri S.V. Ramana Murthy, DDG(NAD) CSO, MOSPI
13. Shri Chander Kant, Addl. Statistical Advisor, DES, M/o Agriculture
14. Dr. K. K. Tyagi, Principal Scientist, IASRI, Delhi
15. Dr. Tauqueer Ahmad, Senior Scientist, IASRI, Delhi
16. Smt. P. Bhanumati, Director, NAD, CSO, MOSPI
17. Smt. Arundhati Singh, Director(Horticulture), M/o Agriculture
18. Shri Prakash Lakhchaura, Director, FSI, Dehradun
19. Shri Ajit Kumar N, JD, DADF, M/o Agriculture
20. Shri Kumar Sundaram, Dy. Director, NAD, CSO, MOSPI
21. Smt. Biju Cyriac, SSO, NAD, CSO, MOSPI
22. Shri R R Pandey, SSO, NAD, CSO, MOSPI
23. Shri Chetan Kumar, JSO, NAD, CSO, MOSPI
24. Ms. Simpy Singh, JSO, NAD, CSO, MOSPI
25. **Dr. S. Durai Raju,** DDG(NAD), CSO, MOSPI – **Member Secretary**

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DATA: SOURCES & TIME LAG			
	Items	Source of Data	**Time Lag** (With reference to Compilation of First Revised Estimate)
	PRODUCTION DATA		
	Major and minor crops		
1	Major crops	DES, M/o Agriculture, Govt. of India (for Production)	*
2	Minor crops	DES, M/o Agriculture, Govt. of India (for Production)	*
3	Small millets	DES, M/o Agriculture, Govt. of India (for Production)	*
4	Other pulses	DES, M/o Agriculture, Govt. of India (for Production)	*
	Commercial crops		
5	Tea	Tea Board (for Production)	*
6	Coffee	Coffee Board (for Production)	6-12 Months
7	Rubber	Rubber Board (for Production)	6-12 Months
8	Cashew nuts and cocoa	Directorate of Cashew nut and Coca Development (for Production)	*
9	Horticulture crops and floriculture	National Horticulture Board (NHB) for production	*
10	Opium	Central Bureau of Narcotics for production	1 Year
11	Arecanut	Directorate of Arecanut and Spices Development for production	*
12	Toddy	NSS Report 61st Round	Based on Rates & Ratios
13	Fodder	DES, M/o Agriculture, Govt. of India (for Area & LUS)	1.5 Years
14	Grass	DES, M/o Agriculture, Govt. of India (for Area)	1.5 Years
15	Mulberry	State DES(for area (ha) & value per hectare)	1 Year
16	Miscellaneous food and non-food crops	State DESs (for area (ha) & value per hectare)	1.5 Years
17	By products	DES, M/o Agriculture, Govt. of India (for Area &) and CCS	1.5 Years
	Livestock products		

18	Milk, eggs, Meat and wool	Department of Animal Husbandry and Dairying (DAHD), M/o Agriculture, Govt. of India (ISS) (for Production)	*
19	Other Products – Silk – Ere, Tassar, Muga And Honey And bee wax	Central silk board for production and prices of silk and KVIC for production of honey (for Production)	1 Year (Honey)
20	Operation of irrigation system	Budget documents of state governments	*
	Forestry		
21	Industrial wood (Recorded)	State Forest Departments (SFD)	8 Months
22	Industrial wood (Unrecorded)	Ratio Based	Based on Rates & Ratios
23	Trees outside forest	Based on FSI Studies	8 Months
24	Fuelwood	NSS Consumer Expenditure Surveys (61st Round), Office of the Registrar General of India & Enterprise Survey results	Based on Rates & Ratios
25	Non timber Forest products	SFDs for value of output	8 Months
	Fishery		
26	Marine fish, inland fish, Subsistence fish and prawns	State Fisheries Departments	8 Months
	Inputs		
27	Seed Rate	DES, M/o Agriculture, Govt. of India (Cost of Cultivation Studies)	Based on Base year estimate
28	Pesticides	Directorate of Quarantine & Plant Protection for	1 Year
29	Repair and maintenance	All India Debt and Investment Survey (AIDIS)	0-6 Months
30	Operational costs for livestock	State DES	Based on Rates & Ratios
31	Electricity	Central Electricity Authority for consumption of electricity	*
32	Chemical fertilizers	Fertilizer Association of India	*
33	Diesel oil	DESAg(CCS) for consumption (in value terms) per diesel engine and per tractor, State DESs for no. of diesel engines and tractors	Based on Base year estimate
34	Irrigation charges	DES (State)	*
35	Feed of livestock (roughages)	Based on Output estimates of certain crops	1 Year
36	Feed of livestock (Concentrates)	Department of Animal Husbandry and Dairying (DAHD), M/o Agriculture, Govt. of India (ILC & CCS)	Based on Rates & Ratios
37	Inputs Fishery	Ratio Based	Based on Rates &

			Ratios
38	Inputs of forestry sector	Ratio Based	Based on Rates & Ratios

* Data is released with the lag of six months in December, however for compilation of first Revised Estimate , there is no time lag.

	Items	Source of Price Data	**Time Lag** (With reference to Compilation of First Revised* Estimate)
	Major and minor crops		
1	Major crops	State DES	#
2	Minor crops	State DES	#
3	Small millets	State DES	#
4	Other pulses	State DES	#
5	Tea	State DES	#
6	Coffee	State DES	6-12 Months
7	Rubber	State DES	6-12 Months
8	Cashew nuts and cocoa	State DES	#
9	Horticulture crops and floriculture	State DES	#
10	Opium	Central Bureau of Narcotics	1 Year
11	Arcanut	Directorate of Arcanut and Spices Development	#
12	Toddy	NSS Report 61st Round	Based on rates and ratios
13	Fodder	State DES	#
14	Grass	State DES	#
15	Mulberry	State DES	#
16	Miscellaneous food and non-food crops	State DES	#
17	By products	Based on CCS Rates & Ratios	1 Year
	Livestock products		
18	Milk, eggs, Meat and wool	State DES	#
19	Other Products – Silk – Ere, Tassar, Muga And Honey And bee wax	Central silk board for silk and KVIC for honey	1 Year
20	Operation of irrigation system	**Budget documents of State governments**	No Lag
21	Industrial wood (Recorded	State DES	#
22	Industrial wood (Unrecorded)	State DES	#
23	Trees outside forest	Based on Industrial Wood Prices	#

24	Fuelwood	State DES	#
25	Non timber Forest products	State DES	#
26	Marine fish, inland fish, Subsistence fish and prawns	State DES	#
	Inputs		
27	Seed	State DES	#
28	Pesticides	Directorate of Quarantine & Plant Protection for	1 Year
29	Repair and maintenance	Based on Rates & Ratios	#
30	Operational costs for livestock	State DESs	#
31	Electricity	Central Electricity Authority for consumption of electricity	6 Months
32	Chemical fertilizers	Fertilizer Association of India	*
33	Diesel oil	Based on CCS Rates & Ratios	Based on Base year estimate
34	Irrigation charges	State Budget	*
35	Feed of livestock (roughages)	Based on Output estimates of certain crops	1 Year
36	Feed of livestock (Concentrates)	Based on CCS Rates & Ratios	Based on Rates & Ratios
37	Inputs of forestry sector	Based on Rates & Ratios	Based on Rates & Ratios
38	Inputs for fisheries	Based on Rates & Ratios	Based on Rates & Ratios

\# Available for some States(10-12) at the time of first Revised Estimate. But with a time lag of 0-6 Months, Price data for the remaining States are received

* Data is released with the lag of six months in December, however for compilation of first Revised Estimate , there is no time lag.

References

1. National Accounts Statistics- Sources and Methods(2012), CSO
2. National Accounts Statistics(2013), CSO
3. System of National Accounts(2008)
4. Report of the Professional Committee on Agriculture and Allied Sectors under the Chairmanship of Prof Y K Alagh
5. Report of the Expert Committee on Agriculture under the Chairmanship of Prof A Vaidiyanathan