

## AGREEMENT ON AGRICULTURE: DOMESTIC SUPPORT MEASURES

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The General Agreement on Tariffs and Trade (GATT) had traditionally focused on trade measures and not so much on purely domestic production policies, except where they had impact on trade (e.g. subsidy issues in GATT 1994's Article XVI). For the first time the Uruguay Round (UR) Agreement on Agriculture (AoA) formally recognized a close link between domestic and trade policies. The focus of the domestic support provisions of the AoA is on limiting subsidies on those areas that distort trade as these concern trading partners. At the same time it leaves ample scope for designing domestic agricultural policies that are not trade distorting. Given the importance of agricultural development for most developing countries and the role support and subsidies play in agricultural development, disciplines on domestic support measures are of obvious importance for them.

With this background, the chapter, organised in four sections, introduces the main provisions of the AoA on domestic support measures; provides a detailed account of domestic support to Nepalese agriculture, as per the AoA framework; gives some information on domestic support to agriculture in India given its relevance for Nepal; and draws some conclusions.

### THE AoA RULES ON DOMESTIC SUPPORT MEASURES

According to the AoA, domestic support refers to support provided by government (including revenue foregone) *in favour of the producers* of the *basic agricultural product* or non-product-specific support provided in favour of agricultural producers in general. The emphasis is on "in favour of producers". This means, for example, subsidies granted to producers of sugarcane are counted while those to a sugar factory are not.<sup>4</sup> The AoA also defines "basic agricultural product" as the product as close as practicable to the point of first sale, e.g. sugarcane, not sugar.

The AoA disciplines domestic support measures through two types of commitments: quantitative and qualitative. The quantitative commitment establishes schedules of commitments limiting subsidization. Support measures are grouped into exempt and non-exempt categories (Table 1). No limits on outlays are placed

**Table 1: Listing of exempt and non-exempt domestic support measures**

Exempt measures	Non-exempt measures
Green Box measures	All measures that are "not" exempt
Article 6.2 development measures	The outlays on these measures are expressed in terms of Total Aggregate Measurement of Support (Total AMS), with two components:
Blue Box support	Product-specific AMS
<i>De minimis</i> level of support	Non product-specific AMS

<sup>4</sup> Subsidies granted to industries (e.g. sugar factory) are governed by WTO Subsidies Agreement.

on the former. In the case of the latter measures, there are limits. The qualitative commitment establishes a definition of domestic support policies that are exempt from the reduction commitments<sup>5</sup>.

## **Exempt Measures**

### Green Box

These measures are listed in Annex 2 of the AoA. The fundamental requirement for exclusion of these policies from reduction commitment is that they have no, or at most minimal, trade-distorting effects or effects on production. They must: be provided through publicly funded government programmes (including revenue foregone); not involve transfers from consumers; and must not have the effect of providing price support to producers. The outlays on the exempt measures can even be increased without any limitation. The Green Box applies to both developed and developing countries.

There are 13 measures listed in Annex 2 of the AoA. They include:

- General services, including research, pest and disease control, training, extension, inspection, marketing and promotion services, and infrastructural services;
- Food security stocks;
- Domestic food aid; and
- Direct payments to producers, including decoupled income support, income insurance and safety net programmes, disaster relief, producer or resource retirement schemes, investment aids, environmental programmes, and regional assistance programmes.

### Article 6.2 Development Measures

Article 6.2 of the Agreement excludes from the reduction commitment, as Special and Differential Treatment (SDT) for developing countries only, some support measures that fit into the developmental category. As an integral part of the development programme of developing countries these measures are designed to encourage agricultural and rural development directly or indirectly. They include:

- Investment subsidies which are generally available to agriculture in developing countries;
- Agricultural input subsidies generally available to low-income or resource-poor producers in developing countries; and
- Domestic support to producers in developing countries to encourage diversification from growing illicit narcotic crops.

Since these are basically the same types of subsidies as non product-specific Aggregate Measurement of Support (NP-AMS a non-exempt category, discussed below), Article 6.2 provides additional scope (beyond the AMS limit) for subsidies, under the above criteria. As of 2000, only 24 developing WTO Members used this provision in one or more years since 1995. On the whole, outlays notified under this

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<sup>5</sup> This introductory section is based on Elamin (2000), available at [www.fao.org/trade](http://www.fao.org/trade).

heading have been small relative to the value of agricultural production (VoAP): below 1% for 15 of the 24 countries, between 1-2% for other five and over 2% for only four countries (India, Malaysia, Morocco and Turkey) (Sharma 2002).

### Blue Box

These are direct payments under production-limiting programmes and are exempt from the reduction commitment if such payments are:

- Based on fixed area and yield; or
- Made on 85 percent or less of the base level of production; or
- Made on a fixed number of head in the case of livestock.

### De minimis Exemptions

This provision exempts a small portion of domestic subsidies that is otherwise subject to reduction commitment (see below). The exempted levels for developed countries are 5% of the total value of production of specific agricultural products in question (product-specific *de minimis* level) and an additional 5% of the value of total agricultural production on non product-specific outlays (non product-specific *de minimis* level). For developing countries, the limits are 10%. The disciplines on non-exempt support measures (discussed below) do not apply to countries where total non-exempt support (Total AMS) is less than these thresholds.

### **Non-exempt Measures**

Article 6.1 of the AoA simply states that all support measures that are *not* exempt are subject to reduction commitment. The reduction commitment is expressed in terms of a “Total Aggregate Measurement of Support” or Total AMS. It is the sum of expenditures on non-exempt domestic support, aggregated across all commodities and policies. For evaluating the level of support, the Total AMS is divided into the following two categories:

- *Product-specific AMS*: the total level of support provided for each basic agricultural product (e.g. price support, direct payment, etc. that can be clearly identified with a product, e.g. rice, wheat etc.).
- *Non-product-specific AMS*: the total level of support provided by policies that are directed at the agricultural sector as a whole, excluding product-specific support (e.g. fertilizer subsidies, that can not be clearly identified with a specific product).

The AoA also defines an *Equivalent Measurement of Support (EMS)*, which is product-specific support for which it is impractical to use the AMS methodology. Where there is no overlapping, the Total AMS then is the sum of these three categories of support.

Other related provisions on AMS include:

- Reduction commitments refer to the Total AMS, i.e. there are no commodity or policy-specific reduction commitments;

- Any modification to domestic support measures, or introduction of new measures that do not satisfy the criteria for exemption, shall be included in the calculation of the Current AMS (Article 7); and
- Least-developed countries (LDCs) do not have to make any reductions to their AMS but cannot exceed their Base AMS.

In the UR, the agreement was to reduce Total AMS by 20% (13.3% for developing countries and none for LDCs), to take place in equal annual instalments over the implementation period. The planned annual reduction commitment is included in country Schedules, which are legal documents. For each year of the implementation period, Members compute Current Total AMS, which should not exceed the level bound in the Schedules.

Table 2 shows domestic support commitments of 20 new members, i.e. those countries that acceded the WTO after 1995 through the “accession” process, to show the range of commitments applicable to Nepal and other new members.

**Table 2: Domestic support commitments of Nepal and other new WTO members<sup>1/</sup>**

Sr. No.	Member	Accession Year	Final AMS			Article Support	6.2
			Value	Currency <sup>2/</sup>	<i>de minimis</i> %		
1	Ecuador	1996	0	ECS	10	Yes	
2	Bulgaria	1996	520	EUR mill	5	-	
3	Mongolia	1997	0	MNT	10	Yes	
4	Panama	1997	0	PAB	10	Yes	
5	Kyrgyz Republic	1998	0	KGS	5	-	
6	Latvia	1999	0	SDR mill	5	-	
7	Estonia	1999	0	EEK	5	-	
8	Jordan	2000	1334	JOD 000	10	Yes	
9	Georgia	2000	0	GEL	5	-	
10	Albania	2000	0	ALL	5	-	
11	Oman	2000	0	OMR	10	Yes	
12	Croatia	2000	134	EUR mill	5	-	
13	Lithuania	2001	95	USD mill	5	In de minimis	
14	Moldova	2001	13	SDR mill	5	-	
15	China	2001	0	CNY	8.5	In AMS	
16	China Taipei	2002	14165	TWD mill	5	-	
17	Armenia	2003	0	USD	5	-	
18	Macedonia	2003	16	EUR mill	5	-	
19	Cambodia	2003	0	n.a.	10	Yes	
20	Nepal	2003	0	n.a.	10	Yes	

<sup>1/</sup> That is, the countries that acceded the WTO after 1995, through the “accession” process.

<sup>2/</sup> Several countries have expressed AMS limits in Euro (EUR), or Special Drawing Rights (SDR) or US\$ (USD).

Source: Brink (2003) and WTO on-line database.

## DOMESTIC SUPPORT TO NEPALESE AGRICULTURE

### Overview

In Nepal ‘agriculture’ is generally defined in a broad sense to include agriculture proper (crops and livestock), fishery, irrigation and forestry. Since the AoA ex-

cludes fishery and forestry sub-sectors, all references to agriculture in this chapter include only agriculture proper and irrigation, unless stated otherwise. Agriculture is undoubtedly the major sector of the Nepalese economy in terms of GDP, employment, trade etc. Despite this role, and repeated policy statements that give priority to agriculture, the share of agriculture in total expenditure has fallen steadily from about 15% in the fiscal year 1995 to around 10% in 2001 as is evident in Table 3. To a large extent this reflects government decision to give higher priority to other sectors like local development, health, power generation and so on. Conscious decisions to reduce funding to some areas within agriculture also contributed to this situation. The period also saw fewer and fewer large-scale donor-funded agricultural and irrigation projects (Karkee 2002).

**Table 3: Actual expenditures in agriculture sector, FY1994-01**  
(billion Rs, current price)

Sector	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
Total government expenditure	39.1	46.5	50.6	56.0	62.8	66.1	79.8
Total Agriculture	5.4	5.3	4.8	4.8	5.2	5.2	6.4
Agriculture proper	2.7	2.3	2.0	2.2	2.2	2.2	2.5
Irrigation	2.6	3.0	2.8	2.5	2.9	3.0	4.0

Source: Economic Survey, various years, Ministry of Finance

Within the overall agriculture sector, irrigation received significant budget increases in nominal terms. As a result, the expenditures in real terms appeared maintained. However, allocations for agriculture proper suffered even in nominal terms, leave alone in real terms. During the period 1994/95-01/02, agriculture proper accounted for about 44% of total agricultural expenditure, the rest being on irrigation. With this background, the rest of the section reviews support to agriculture using the AoA classification of exempt and non-exempt support measures.

### **Support Measures Exempted by the AoA**

As stated earlier, these measures are under Green Box, Blue Box, Article 6.2 and *de minimis* categories. The AoA does not restrict or limit government outlays that fall under these measures.

#### Green Box Measures

Annex 2 of the AoA defines these measures in 13 paragraphs. Nepal does not use all these measures. So we can be selective. The measures that appear prominent are agricultural research, extension, agricultural roads, domestic food aid and miscellaneous green box measures.

**Agricultural research:** It relates to the heading 'General Services' mentioned in paragraph 2, Annex 2 of the AoA. In Nepal, agricultural research activities – and related expenditures - are concentrated on crops (food grain, cash crops, potato, oilseeds), livestock (including fisheries) and horticulture (fruits, vegetable and spices). These are also the commodities prioritised by the Agriculture Perspective

Plan (APP). Some even call them the APP commodities.<sup>6</sup> The focus has been on adaptive research. The main research areas include generation and verification of technologies, soil fertility maintenance, plant disease, and problems of hybrid crops. They include region and location specific trials proposed in the Tenth Plan (NARC 2001).

Actual expenditure on research during 1994-2001 was around 2.5 to 5.5% of total expenditure on agriculture (Table 4). It is about 0.2% of the VoAP on average, with a range of 0.17-0.28%. These are very low by international standards. In fact, some international standards call to invest about 2% of the agricultural GDP on agricultural research. That is slightly less than 2% of the VoAP. In a country like Nepal, which has a wide range of ecological variation, this “norm” could be still higher. Almost all funding for research comes from public sources, as there is little private sector research in Nepal.

Table 4: **Expenditure on agricultural research**

Indicator	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
Total Amount (Rs million)	154	168	185	234	227	293	425
Research expenses as % of: Agriculture <i>budget</i>	2.9	3.2	3.9	4.9	4.4	5.6	6.6
Value of agricultural production	n.a.	n.a.	0.15	0.17	0.15	0.17	0.24

Source: Computed from the following: agriculture research data from Annex Table 1, total agricultural budget from Table 3, and value of agricultural production from Annex Table 3.

From the WTO standpoint, there are no consequences as there is no limit on these outlays. The only obligation is to periodically notify the outlays to the WTO. So, the relevant statistics need be refined and updated regularly.

**Extension and development services:** This also falls under General Services of the Annex 2 measures. The MoAC provides extension services all over the country, with the manpower strength of around 10 000 staff. The government extension programme covers a variety of activities, including training services, extension and advisory services, marketing and promotion services, pocket area development programme, pest and disease control programme, inspection services, infrastructural services, soil conservation, local level self sufficiency programme, and fodder grass land and pasture development. Table 5 shows the actual expenditure incurred in agricultural extension and development support programme. The appropriateness of the share of the government outlay on research versus on extension or other programmes is a matter for debate from the standpoint of the efficient allocation of resources, but this is not a WTO issue. The AoA rule does not place any limit on extension outlays.

Some innovative approaches to extension are underway, e.g. partnership and contracting-out of extension services to NGOs and Village Development Committees (VDCs) in selected districts. Rightsizing of the staff and transfer of grassroots components of government organizations to local bodies are in process

<sup>6</sup> These are food crops (paddy, maize, wheat, potato), livestock (buffalo/dairy, fodder and pasture), high value crop (citrus, vegetable, other fruits, sericulture, tea, coffee), soil fertility, intensive farming, and integrated pest management.

for execution as per the recommendation of the Public Expenditure Review Commission. The implementation responsibilities of district level extension activities have been transferred to local bodies from FY 2002/03 in line with the local self-government act.

Table 5: **Actual expenditure on agricultural extension and Related support services** (million Rs.)

Programme	1994	1995	1996	1997	1998	1999	2000
Crop extension services 1/	436	484	486	561	719	981	784
Livestock extension services	203	191	295	451	443	672	671
Cooperative development services	8	8	11	11	10	14	47
Food technology and quality control services	10	13	14	14	16	18	22
Total	656	696	806	1037	1189	1685	1524

1/ Includes about 10 expenditure incurred in fisheries

Source: MoAC, Planning Division.

**Agricultural roads:** This falls under Para 2 (g) of the Green Box measures. The concept of agricultural roads as a priority input for agricultural development was popularised by the APP with its emphasis on commercialisation of agriculture (APROSC & JMA 1995). During the first four years of the Ninth Plan (1997-2001), the District Development Committees (DDCs) were able to complete only 146 km of all-weather agricultural road representing 9% of the target of 1 701 km. Over the same period, the budget allocated for agricultural roads amounted to Rs. 440 million, or less than 14% of the amount proposed in the Ninth Plan (ANZDEC 2002). During this period, the principle constraint was limited capacity at central and DDC level to plan and design roads for construction. It took time to set up the institutional structure and to apply the planning procedure at the DDC level. Road planning and implementing capacity at DDC level has now been strengthened significantly and District Transport Master Plans for 47 districts are completed and some 1 200 km of agricultural roads designed, and are ready for implementation.

**Domestic food aid:** This refers to Para 4 of the Green Box measures. The Nepal Food Corporation (NFC) implements domestic food aid programmes that involve government outlays. The NFC activity now amounts to a very small proportion of total grain sales in non-remote areas (procurement of around 29 000 tonnes and sales of 9 400 tonnes in non-remote areas in 1999/00). However, the scale of the activity is substantive in 12 districts classified as remote areas, where although the volume of sales amounts to about 10 000 tonnes, this is large relative to total consumption (52 kg per household). The cost of subsidized food grain distribution itself has been about Rs. 225 million annually in recent years (ANZDEC 2002). The objective of the programme is meeting basic food requirements as a social safety net in remote mountains and hills. Bulk of the cost is for transporting food grains, for which porters, mules, aircraft and even helicopters are used.

Some apprehensions whether this programme would be affected following Nepal's WTO membership are found. This is not correct. There is no price support programme in Nepal. This means the NFC procures grains in open market and so there is no price effect to producers. Thus, there are no implications for the AMS.

**Other Green Box measures:** The government implements some other programmes listed under Green Box measures. These include programmes such as relief from natural calamities (e.g. disease outbreaks, pest infestation) and infra-structural developments. Relief programmes are obviously implemented when there is a calamity, and so there is little to review the trends. Overall, expenditure on these measures are not large, but more importantly the AoA does not place any limit on these outlays.

### Blue Box Measure

As noted earlier, the programme requires that limitations be placed on area or production, which is entirely irrelevant for Nepal where lack of production – and not excess production - is the issue. So, in common with most developing countries, there was never a Blue Box-type subsidy in Nepal, nor is it likely to be so in the near future.

### Article 6.2 Development Measures

Although exempted, these relate to non product-specific AMS (NPS-AMS), and are discussed below.

### De minimis Level of Support

This is about exempting a portion of the AMS from reduction. This is also discussed below.

### **Support Measures Not Exempted by the AoA**

These relate to the Total AMS that has two components as mentioned earlier. They are: *product-specific AMS* and *non product-specific AMS*.

### Product-specific AMS

The product-specific AMS (PS-AMS) includes outlays on measures that can be identified with specific products, e.g. rice, sugarcane etc. Such measures typically include minimum support price, crop-specific direct payments and input subsidies tied to a product. Nepal never had any programme on crop-specific direct payments while input subsidies are not crop-specific but to agriculture in general (discussed below). So, the only relevant measure is the producer price support programme.

Minimum price support programmes were started in 1976/77 for paddy and wheat, with NFC procuring the grains. However, analysts hold that this programme was largely ineffective because the NFC never procured substantive amounts of cereals that would support the announced prices. The programme was discontinued in 2001. Currently, the only remnant of this programme is NFC procurements of grains at market prices for sales and distribution in remote and food deficit districts (discussed earlier under “domestic food aid”).

The important point to note in this context is that the AoA does not prevent Nepal from re-implementing the programme in the future. The only limitation is that



price subsidies cannot exceed the *de minimis* level, i. e. 10% of the value of production of the commodity supported. Table 6 shows a rough order of magnitude of the maximum outlays on product-specific subsidies that the AoA would have allowed Nepal to grant. Thus, for example, up to Rs. 3 223 million of subsidy can be granted to paddy farmers through price support or similar measures. Similarly, the limit for sugarcane is Rs 185 million and Rs 10 million for tea.<sup>7</sup> Clearly, these limits are rather high compared to the ability of the government to grant subsidies, as government agricultural budgets for recent years would show.

**Table 6: Estimates of maximum WTO-compatible product-specific subsidies, selected Nepalese crops**

Product	VoP <sup>1/</sup> (Rs. million)	<i>de minimis</i> outlay (Rs. million) <sup>2/</sup>	Product	VoP <sup>1/</sup> (Rs. million)	<i>de minimis</i> outlay (Rs. million) <sup>2/</sup>
Paddy	32233	3223	Jute	499	50
Wheat	12160	1216	Tea	97	10
Potato	8410	841	Ginger	859	86
Oilseed	347	35	Meat	12288	1229
Tobacco	21	2	Milk	16450	1645
Total agriculture including fisheries				119903	11990

Notes: <sup>1/</sup> Total value of production based on 1999-2002 data (Annex Table 3)

<sup>2/</sup> *de minimis* outlay = 10% of the value of production, i.e. 10% of the first column.

Source: Authors' estimates

### Non Product-specific AMS

As in many developing countries, Nepal had and continues to implement programmes that provide subsidies to farmers through inputs, mainly fertilizers, irrigation and credit. Some other inputs, e.g. seeds, saplings etc have also been subsidized occasionally, but total subsidy on these inputs has always been very low.

**Fertilizer subsidies:** Subsidies were being provided in fertilizers for many years. They were given in two forms: price subsidy and transport subsidy. The former reduced the cost of fertilizers to farmers. Since 1973/74, fertilizer prices were kept uniform throughout the country, which implied that farmers in accessible areas cross-subsidized others in remote areas. Efforts were made to maintain domestic fertilizer prices higher by 15-20% than in India to check smuggling. Transport subsidy was given to reduce the cost of transportation to remote areas. There are some significant differences in the level of subsidies estimated in various published sources and studies. The main reason seems to be the following. Actual subsidies have always been higher than the amount initially allocated for two reasons: first, actual expenditures exceed initial estimates; and second, some estimates include while others exclude the financial loss incurred by the agency supplying the fertilizers, which are eventually absorbed by the government (MoAC 2000). Thus, based on actual expenditure, subsidies have averaged about Rs. 480 million per annum

<sup>7</sup> These values are based on production values for 1999-02; as these values increase the subsidy limits also increase.

<sup>8</sup> These values are based on production values for 1999-02; as these values increase the subsidy limits also increase.

during 1988-1998 (Annex Table 1). Taking into account the above factors, the higher estimates average about Rs. 1 000 million per year.

Table 7 shows the amount paid by the government to Agriculture Input Corporation (AIC) for fertilizer subsidy. The policy was changed in 1997, leading to removal of fertilizer price subsidies from 1999. The stated purpose included reducing subsidy burdens, encouraging private sector participation, and supplying adequate amount of fertilizers on a timely basis.

Table 7: **Fertilizer subsidies in Nepal** (million Rs)

Subsidy head	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
Price	444	995	538	360	343	-	-
Admin. and & transport cost <sup>1/</sup>	211	233	284	201	n. a.	n. a.	n. a.
Total subsidy	655	1228	822	561	343	244	38 <sup>2/</sup>

Notes: <sup>1/</sup> includes transport subsidy and rent of warehouses. <sup>2/</sup> Transport subsidy only. The last two years are post-liberalization years.

Source: AIC financial statements.

From the standpoint of the AoA rules, there is no limitation that applies to fertilizer subsidies only, but that the sum of all NPS-AMS, including fertilizer subsidies, is within the *de minimis* limit. This is tested below. In any case, fertilizer subsidies have always been small in Nepal, amounting to no more than 1% of the VoAP.

**Irrigation subsidy:** The two major types of irrigation schemes existing in Nepal are surface and ground water. Most of the surface irrigation schemes (including some deep tube-wells) are constructed and almost fully funded by the government. Despite the efforts made towards some cost sharing, particularly on O&M, these schemes still remain subsidized.

As with other subsidies, irrigation subsidies are also most commonly understood as the difference between the cost of supplying water for irrigation and the revenue received as payment from users. Although in theory the former includes both capital or construction cost and operation and maintenance costs, only the latter are considered in the AoA's definition of the NPS-AMS while construction costs are considered as Green Box support. In Table 8, irrigation subsidies are estimated as the difference between total operation and maintenance (O&M) costs and revenues collected from users. The first row shows total irrigation sub-sector O&M budget expenditure based on the Department of Irrigation data, as reported in a September 2001 study on O&M by Nepal Irrigation Sector Project (NISP). This study also provides data on O&M cost and water charge recovery for 26 surface and ground water projects under the Department of Irrigation. The average recovery rate is very low, only 1.3% of the O&M cost on average for the 26 projects. The recovery rate is 15% in only one case (Dunduda irrigation scheme), 4% for five other schemes, less than 1% for four other schemes and zero percent for the rest 16 schemes – hence the overall average rate of 1.3%. In other words, 98.7% of the total O&M cost is subsidy. The table shows the levels of subsidies estimated for various years by applying this rate of subsidization to the O&M values. The average subsidy during 1993/94-2001/02 period comes at Rs 113 million.

**Table 8: Subsidies on irrigation schemes operated and managed by the Government (in million Rs)**

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02
O&M Expenditure	96	113	125	121	133	80	126	145
Estimated subsidy level <sup>1/</sup>	95	112	123	120	132	79	124	143

<sup>1/</sup> The subsidy levels are computed as 98.7% of the O&M costs, the coefficient based on the data for 26 schemes covered in a NISP study on this topic (see also text).

Source: The first row is the HMG data on irrigation sub-sector O&M budget expenditures, as reported in the O&M study by NISP, September 2001.

In the case of shallow tubewell (STW), the government subsidized the installation part until recently, but not the O&M costs. Even these subsidies were discontinued from 2000/01. Table 9 shows estimated subsidies on STWs. A debate has been going on in Nepal since 2000 on the impact of the subsidy removal. The statistics show, and several case studies have confirmed, that the demand for STWs has declined considerably following the removal of the subsidies. The other issue debated is the apparent anomaly that where surface schemes are subsidized heavily the STWs are not.

**Table 9: Trends in shallow tubewell subsidy**

	1988/89- 1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1999/00	2000/01
Subsidy rates (%) for:								
Groups	75	75	75	85	60	60	60	0
Individuals	40	50	40	40	30	30	0	0
Amount (million Rs)	n. a	135	153	114	116	113	n. a	n. A

Source: ANZDEC (2002), and statistics maintained in MoAC and ADBN.

**Subsidized credit:** The government has made efforts, especially since mid-1970s, to encourage commercial banks to operate in rural areas and expand credit flow to priority sectors, mainly agriculture in Nepal's context. Besides the ADBN, whose primary objective is farm credit, other commercial banks also had priority sector credit programmes. Such targeted credit programmes as Small Farmers Development Programme and Production Credit for Rural Women were successfully implemented. As said above, many small scale surface irrigation schemes and tubewell programmes were implemented with the help of subsidized credits.

As these programmes were implemented with government decisions, the credit subsidies fall under non-exempt category from the AoA viewpoint. So they need to be included as part of the NP-AMS. To avoid the risk of double counting, credit subsidies are not estimated separately but under the programme to which the subsidies were given, e.g. subsidies on tube wells. Moreover, the total amount of subsidy involved is not considered to be large, especially during the last 5-6 years when several programmes involving credit subsidies have been phased out.

**Total subsidies: the NPS-AMS level in relation to the de minimis level of support.** For the WTO Members without AMS reduction commitment (including Nepal, see WTO 2003), the total amount of subsidies cannot exceed the *de minimis* level of 10% of the total VoAP. Table 10 shows the actual numbers while Fig-

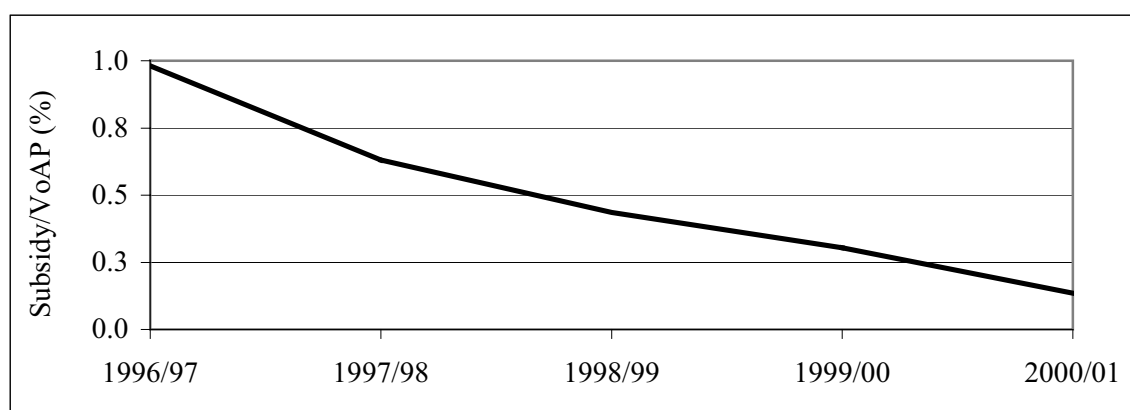
ure 1 shows the trend in the ratio of NPS-AMS to total VoAP. For example, with the total NPS-AMS of Rs 709 million during 1996/97-2000/01 and the value of production of Rs 153 643 million, the ratio was 0.5%. This is indeed a very small value compared to the 10% limit allowed by the AoA. Figure 1 clearly shows that the ratio has been falling over time. As a matter of fact, even if the entire government budget on agriculture is assumed to be trade-distorting subsidies, and thus the NPS-AMS, the ratio comes at only about 4.5%. The key message is very simple – that there is an immense scope for Nepal to grant input subsidies if there are resources and the government considers the subsidies to be useful for agricultural development.

**Table 10: Various non product-specific agricultural subsidies and total value of agricultural production**

Subsidies on:	Unit	1996/97	1997/98	1998/99	1999/00	2000/01	Average
Fertilizers	Million Rs	822	561	343	244	38	402
Irrigation	Million Rs	123	120	132	79	124	116
Tubewell	Million Rs	113	0	0	0	0	23
Credit	Million Rs	193	167	204	205	76	169
Total subsidies	Million Rs	1251	848	679	528	238	709
Total output value	Million Rs	127494	134414	155840	173902	176563	153643
<i>Ratio: subsidies/VoAP</i>	%	1.0	0.6	0.4	0.3	0.1	0.5

Source: Subsidies are from various tables in the text and annex.

**Figure 1: Non product-specific AMS as percentage of the total value of agricultural production (%)**



Source: Based on Table 10.

**Article 6.2 exemptions: Subsidies to “low-income and resource-poor” (LIRP) farmers.** Article 6.2 of the AoA exempts from the AMS some inputs and investment subsidies that meet some criteria, including when these supports are directed to LIRP farmers. The challenge is one of defining the LIRP farmers and ascertaining the share of the subsidies captured by these farmers. The AoA itself does not define the LIRP farmers. As a result countries using this provision have defined LIRP farmers in various ways. In the case of Nepal, as noted above, the level of the AMS is very low relative to the VoAP. So there is hardly a need for exempting from the AMS a part of the subsidies using Article 6.2. Yet, in the WTO

context, it is desirable to think ahead. One day this provision may turn out to be handy for Nepal also, as seems to be the case for India.<sup>9</sup>

For Nepal, one could argue that almost all farmers are LIRP given that the average farm size is only about one hectare. Table 11 shows that the average size for 97% of the farms (i.e. farms below 4 hectares) is only 0.8 ha. Besides this, these farms are also “Resource Poor” given the state of technology used and resources. Many income and expenditure surveys also draw the same conclusion. Nepal may consider “officially” notifying to the WTO that 97% of the farms qualify as LIRP farmers.

Table 11: **Number and area of land holdings by size, 1991/92**

Category of holding	Total holdings		Land area	
	Number (000)	Cumulative (%)	Total (000 ha)	Average (ha)
Less than 1 ha	1878	69	792	0.42
Less than 4 ha	757	97	1319	1.74
Less than 10 ha	61	99	335	5.49
10 ha and over	8	100	151	18.88

Source: National Sample Census of Agriculture 1991/92, CBS. The average farm size for the first two categories, which amount to 97% of the farms, is 0.8 ha.

## SUPPORT TO AGRICULTURE IN INDIA

The nature and the extent of the negative impact of farm subsidies in developed countries on the agriculture of developing countries is an intensely discussed topic in the context of the AoA. A somewhat similar apprehension prevails in Nepal on subsidies to Indian agriculture, given the strong influence of the Indian farm prices and other policies on Nepal. In view of this, it would be useful to briefly review the nature and level of subsidies to Indian agriculture. The review covers three aspects: levels of subsidies as notified to the WTO; support estimates in the literature; and some views on subsidies and investment.

Table 12 summarizes India’s domestic support levels based on notifications to the WTO. Of particular interest here are the support outlays in the Amber Box category. For 1995, India’s notified PS-AMS was *negative*, to the tune of US\$30 billion, or about 30% of the VoAP.<sup>10</sup> Similar large negative support was shown also for the base period, 1986-88. A negative AMS signifies taxation, rather than support. Being negative, the support is also technically *de minimis*, and there is nothing to reduce, unlike with a positive AMS support.<sup>11</sup> Notifications for 1996 and 1997, however, show sharp reductions in the PS-AMS - although still negative, only 3% of

<sup>9</sup> India notified high NPS-AMS outlays (equivalent to 7.5% of the value of agricultural production) for the first year, 1995/96, but Article 6.2 category was not used. India, however, reserved the option of transferring almost 80% of the NPS-AMS outlay to the Article 6.2 category, stating in its Schedule that about 80% of the land is farmed by LIRP farmers (with operational holdings of 10 ha or less). This option was used for subsequent years when bulk of the outlays was notified under Article 6.2 category, thus opening up substantive room for NPS-AMS.

<sup>10</sup> In the AoA’s AMS methodology, a PS-AMS can be negative when current farm support price is lower than fixed external reference price used for the base period, 1986-88.

<sup>11</sup> More importantly, the negative PS-AMS means that India can raise support outlay considerably, first to cancel out the negative part (to zero) and then to raise it to 10% of the VoAP of the respective commodities.

the VoAP. No explanation was given for the drastic reduction within just one year. One reason could be that the number of products notified as “price supported” fell, from 18 products in 1995 to a few products for 1996 and 1997 (for rice, wheat and a category called coarse cereals). While in 1995, 26% of the total negative PS-AMS was accounted for by rice, 32% by wheat, 15% by coarse cereals and the rest by others (e.g. pulses, oilseeds, cotton, tobacco, jute and sugarcane), only rice and wheat accounted for most of the (negative) support in the subsequent two years.

**Table 12: Domestic support outlays notified to the WTO by India: 1995-1997 <sup>1/</sup>**

Measure	Unit	1995	1996	1997
Green Box	Million US\$	2196	2502	2873
- As % of total value of agricultural production	%	2.9	2.9	3.4
Art. 6.2 (S&D)	Million US\$	254	4855	5172
- As % of total value of agricultural production	%	0.3	5.7	6.1
AMS				
Product specific AMS	Million US\$	29619	-2604	2749
- As % of total value of agricultural production <sup>2/</sup>	%	-38.6	-3.1	-3.2
Non-product specific AMS	Million US\$	5772	930	1003
- As % of total value of agricultural production <sup>2/</sup>	%	7.5	1.1	1.2

1/ No notification posted after 1997.

2/ All outlays are *de minimis* (being negative or less than 10%).

Source: Sharma (2002) based on WTO notifications.

The negative PS-AMS basically reflected the effects of various controls on domestic and external trade that have kept domestic prices of major crops below world prices (Sharma 2002). As regards domestic trade, these controls included restrictions on the movement of agricultural commodities across India’s states, compulsory procurement levies, licensing and stocking requirements and credit controls. At the same time, external trade was controlled during 1995-97 period through export prohibitions, quantitative restrictions, minimum export prices and canalization.

Table 12 further shows that the NPS-AMS outlay was *positive* and close to \$6 billion in 1995, or equivalent to 7.5% of the VoAP. Given the 10% *de minimis* limit for India, this means only some room for raising farm subsidies. Subsidies on electricity and fertilizers accounted for a major share of the NPS-AMS, with credit, irrigation and seeds making up the rest. Presumably given that the percentage NPS-AMS level in 1995 was closer to the 10% limit, India notified much lower NPS-AMS outlay while reporting substantive amount of the NPS-AMS under the Article 6.2 category. As a result, the percentage NPS-AMS level fell to 3% of the VoAP while outlays under Article 6.2 category increased to about 6%, from only 0.3% of the VoAP in 1995. India had reserved in its original WTO Schedule the option to transfer almost 80% of the NPS-AMS outlay to the Article 6.2 category, stating that about 80% of the land is farmed by low-income, resource-poor farmers. The main implication is that India created room for increasing subsidies on farm inputs.

Regarding support estimates, the WTO notifications indicate net taxation or low support to Indian agriculture. Several other studies on the other hand, give

somewhat different picture, especially for more recent years. It should be noted that the AMS methodology is not very intuitive for measuring the extent of farm support because current farm prices are compared with fixed, base period (1986-88) external prices. The more intuitive and commonly used methods like nominal protection rate measure the level of support by comparing domestic and world prices for the same year. The OECD's popular Producer Subsidy Estimate (PSE) is also based on the two prices for the same, current period.

Gulati and Narayanan (2003) discuss the evolution of India's PSE for the period 1986-2000.<sup>12</sup> Under importable hypothesis,<sup>13</sup> the PSEs were found to be negative throughout the period but ranged from -6% in 1987 to -102% in 1997. This variation was mostly due to changes in the price support component of the PSE (in turn due to fluctuations in world market prices) since input subsidies remained within a narrow range (4-8% of VoAP, as in the AMS data). The PSEs were fairly stable (in the range of negative 65-80%) in the first half of the 1990s, but dipped to about negative 100% in 1996 and 1997 when world market prices (mainly cereals) were high. When world prices started to decline after 1997, the PSEs rose substantially, settling at negative 27% in 2000.

The PSEs were also negative for most years under the hypothesis that the covered products were exportables. For 2000, however, the PSE was positive; reflecting the combined effect of the declines in world prices of several basic foods and rises in domestic prices. On the whole, the Indian agriculture was found to have been taxed despite high levels of input subsidies.

Gulati and Narayanan (2003) also present detailed analysis of input subsidies. They find that for India as a whole total subsidies on the three main inputs – fertilizers, irrigation and electricity – rose sharply from about IRs 9 billion (2% of AGDP) in 1982-83 to IRs102 billion (7.7% of AGDP) in 1990-92, and to IRs384 billion (8.7% of AGDP) in 1999-00 (Table 13). The table also shows total subsidies per gross cropped area, which shot up from IRs. 64/ha in the first period to IRs. 2 010/ha in 1999-00. From all accounts, these are indeed massive increases.

**Table 13: Input subsidies in Indian agriculture relative to agricultural GDP and cropped area (in current prices)<sup>1/</sup>**

State	As % of agricultural GDP			I Rs. per hectare gross cropped area		
	1982-83	1990-92	1999-00	1981-82	1990-91	1999-00
Bihar	1.78	6.04	8.31	64	539	1306
Uttar Pradesh	3.01	9.38	10.03	109	746	1915
West Bengal	1.12	3.91	4.61	50	417	1154
<i>India</i>	<i>2.11</i>	<i>7.75</i>	<i>8.72</i>	<i>64</i>	<i>555</i>	<i>2010</i>

1/ Input subsidies included those on fertilizers, irrigation and electricity.

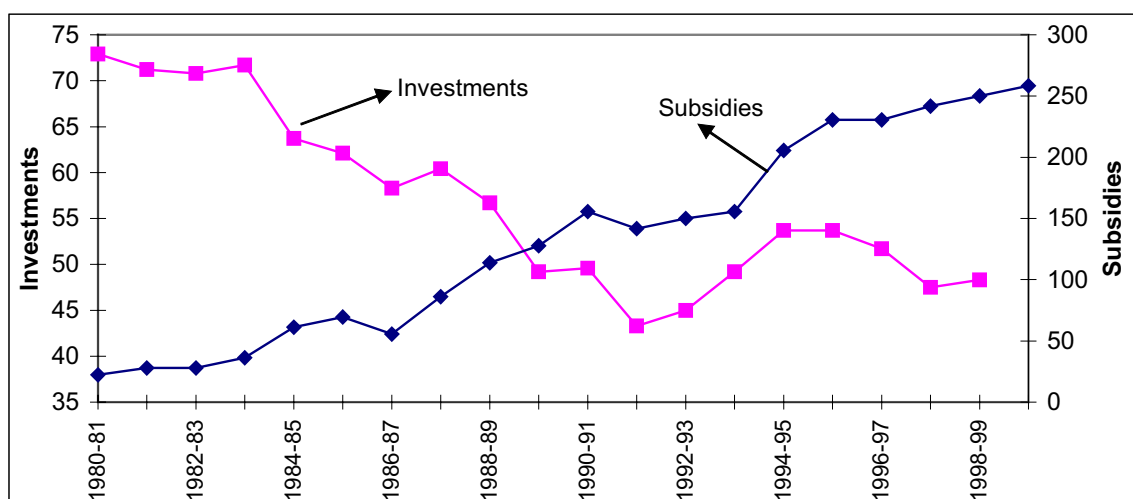
Source: Compiled from statistics in Gulati and Narayanan (2003).

<sup>12</sup> Since there are no direct income payments and other forms of support, the PSE values mostly reflect price support and input subsidies.

<sup>13</sup> That is, assuming that all covered crops are importables, which means that world reference prices are import-parity prices. They also report PSE trends under exportable hypothesis.

**Comments on the input subsidies:** One ongoing debate in India has been on the desirability of input subsidies versus investment on agriculture (Srivastava and Sen 1997; Rao 2002; and Gulati and Narayanan 2003). Although not much of a WTO issue, most analysts hold that the sharp rise in input subsidies as seen above came at the cost of public investment on agriculture, which has been declining (Figure 2). In the early 1980s, total investment averaged about IRs 70 billion, versus IRs 30 billion on subsidies (both in 1993-94 prices); by late 1990s, investment fell to about IRs 50 billion while subsidies rose nine times to average IRs 240 billion, all in 1993-94 prices. As a result, investment amounts to only 17% of the sum of the investment and subsidies. The near perfect negative correlation between the two trends (-0.80) has also been seen as an indication that subsidies have increased at the cost of investment – a trend that is not considered healthy for further development of the agricultural sector of India. Moreover, studies have shown that in developing countries when public investment falls, so does the private investment. Thus, there is a strong and growing consensus that this trend has to be reversed although it may be politically a difficult task.

Figure 2: India – trends in agricultural subsidies and investments, 1980/81-1999/00 (in 1993/94 prices)



Source: Gulati and Narayanan (2003).

## CONCLUDING REMARKS

**Domestic support to Nepalese agriculture is not only very low but also declining in real term:** From the statistics reviewed in the second Section, it was clear that public support to agriculture in Nepal is very low, despite the importance of the sector for the economy and poverty alleviation. Equally worrisome is the declining share of agriculture sector's budget in total public expenditure, from about 15% in 1995/96 to around 10% in 2001/02. While irrigation received some significant budget increases in nominal terms (and has maintained support in real terms), agriculture proper suffered even in nominal terms. To a large extent, these outcomes seem to reflect a conscious decision of the government as budgetary supports were shifted to other sectors. The other important reason was that the donors did not favour large-scale agriculture and irrigation projects in recent years.



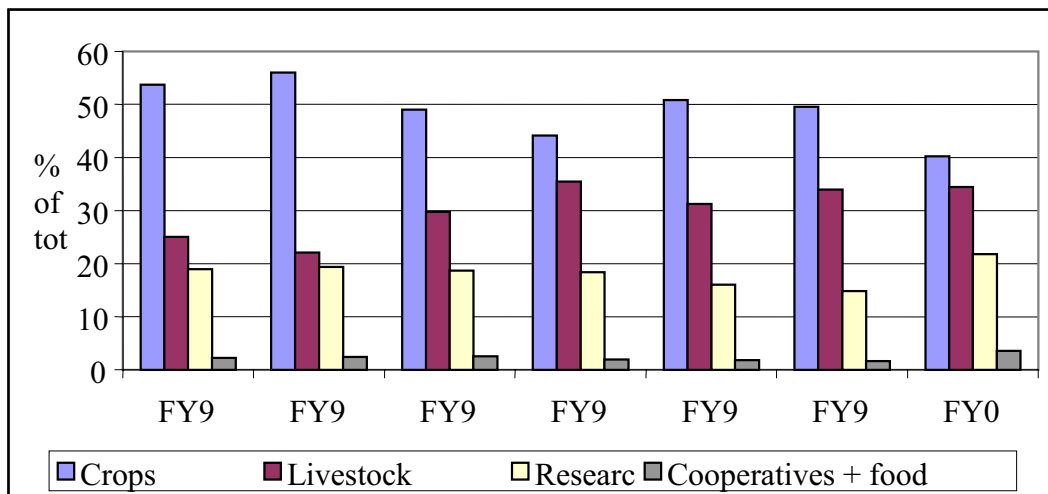
***The implications of the AoA on domestic support to the Nepalese agriculture:*** Given the above situation, there are few direct implications of the AoA. It was noted that the AoA disciplines or limits only some forms of subsidies that are production and trade distorting. Thus, there are no support limits on Green Box measures like agricultural research, extension, agricultural roads etc. Hence there are no issues here from the WTO standpoint. As regards non-exempt support measures that fall under the Amber Box category, expressed in terms of Aggregate Measurement of Support or AMS, Nepal committed at the time of the WTO accession to limit these subsidies to within the *de minimis* level, or 10% of the value of agricultural output (VoAP). Currently, Nepal does not have product-specific AMS as there are no price support programmes. The AoA does not prohibit these programmes for the future provided that subsidies are limited to the *de minimis* level. In any case, the amount of subsidies permitted is considerable, as the analysis in the second Section showed. As regards non product-specific AMS (e.g. on fertilizers, irrigation, seeds, credit etc.), Nepal can grant these subsidies any time up to the *de minimis* level. Compared with this limit of 10% of the VoAP, actual subsidies in the 1990s have been very low - less than 1% of the VoAP. In fact, even if the entire government budget on agriculture is assumed to be subsidies, the ratio does not exceed 5%. So, the key message is that the AoA provides ample room for Nepal to support its agriculture. The main constraint is resource, not the AoA.

***The focus of the debate should be on raising investment on agriculture:*** While this is not a WTO matter, the issue is of critical importance for Nepal. There is a growing consensus around the world that where supply-side constraints are overwhelming, as in Nepal and other LDCs, trade liberalization alone or, for that matter the WTO membership, brings little benefits (e.g. UNCTAD 2004). Unfortunately for Nepal, both trade liberalization and WTO membership occurred in a period when public investment on agriculture was not only low but also declining. Moreover in developing countries in particular, reduced public investment also means lower private investment – thus further undermining the potential gains from trade. In view of these, the government needs to take this matter seriously and find ways to increase public investment on agriculture. It is not very clear if this is mainly a matter of defining priorities in concrete, i.e. in budgetary, term or if there are other constraints also, e.g. lack of human resources for formulating attractive investment projects for donors or the government. At the same time, commercial banks have not been lending to priority sectors, i.e. agriculture sector and rural areas, indicating that the government directives in this area have been almost ineffective. In any case, the WTO cannot be blamed if a country fails to invest adequately to make agriculture competitive.

***Prioritising government expenditures on agriculture:*** With WTO Membership and changing public-private responsibilities, the issue of prioritising public expenditure on agriculture requires some attention. Figure 3 shows the pattern of the allocation of agricultural expenditures for recent years. The question asked is how could this be improved, especially from the standpoint of being competitive in trade following the WTO membership. One question for example is that should Nepal not be spending much more on improving technical standards of food and agricultural products (in the context of the SPS Agreement), by cutting some resources

elsewhere, e.g. extension services? Or, spending more on promoting cooperatives, group farming and contract farming in view of the potential high payoffs from these institutional innovations as emphasized in several commodity studies in this volume? Even on extension, the commodity studies have recommended some significant re-orientation of the focus towards extension programmes that support agribusiness, value added processing activities and private-public partnerships. These are only few examples; there is much more that can be and should be done.

Figure 3: Allocation pattern of government budget to agriculture, Nepal (in %)



Source: Authors, based on the statistics on budget expenditure reported in this chapter.

**Resource allocation for agricultural research:** There are also some issues here. One is very low expenditure on agricultural research, about 0.21% of the AGDP, compared with the standard norm of 1-2% of AGDP in economies where agriculture is vibrant. The other issue is encouraging research by the private sector, or more realistically in partnership with the public sector. This would require a framework of appropriate incentives and enabling regulations. Third, there is a need for reviewing the current allocation of research resources across commodities and themes. For example, research that contributes to the improvement of product quality generates high pay-offs in the context of export trade. Similarly, as the commodity studies in this volume show, much more research is required on value adding processing activities, e.g. processing fruits to produce juice. Fertilizer and pest residues are becoming a major constraint in exporting agricultural products, as noted repeatedly in the commodity chapters and in the three papers on the SPS Agreement. This would be another appropriate area for research to expand on. As resources are limited, research in some other areas has to be cut in order to expand on these and other promising areas with higher payoffs. There is a feeling that a disproportionate amount of resources is used on cereals research.

**Subsidy policy:** As a result of the economic reform programmes implemented during the 1990s, the trend has been the reduction and elimination of subsidies in various areas. Are these policies necessarily sound? This issue has attracted some attention in Nepal, notably in the context of subsidies on tube wells. However, the quality of the analysis and also the debate on this and other subsidy issues (e.g. irrigation, fertilizers and so on) has not been as intense as desirable.

As a result, the government has not been able to convince all stakeholders and there are at times signals of policy reversal. Second, subsidies and investments are two different things and serve different purposes while resources are fungible, which means that the analysis and debate needs also to address the trade-offs involved. This particular debate has been going on in India for some time, where analysts seem to blame the rapidly increased input subsidies for similarly declining agricultural investment. A sound and transparent subsidy policy, fully backed by analyses, is also essential because there is a growing trend in Nepal whereby various stakeholders lobby for subsidies on the ground that agriculture is highly subsidized in India. The government, notably the MoAC, needs sound analyses to explain its position on this and other issues.

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**Table 1: Trends in government expenditure on agriculture**  
(in million Rs)

Sub-sector/sector	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
<i>Agricultural research</i>	80	81	78	95	97	132	154	168	185	234	227	293	425
Extension and dev. services	382	346	412	409	538	546	656	696	806	1037	1189	1685	1524
Livestock	143	99	143	178	164	189	203	191	295	451	443	672	671
Crops (including fishery)	232	241	255	213	343	338	436	484	486	561	719	981	784
Cooperative development	n.a.	n.a.	9	13	24	10	8	8	11	11	10	14	47
DFTQC <sup>1/</sup>	6	6	5	6	7	9	10	13	14	14	16	18	22
<i>Subsidies</i>	297	587	859	1080	548	705	678	752	774	812	621	539	263
Fertilizers <sup>2/</sup>	210	260	774	926	380	323	461	500	502	610	343	244	38
Corporate <sup>3/</sup>	23	269	21	n. a.	32	217	n. a.	41	5	4	3	23	4
Credit <sup>4/</sup>	64	59	60	154	117	148	197	210	193	167	204	205	76
Others <sup>5/</sup>	n.a.	n.a.	3	n. a.	19	17	20	1	74	31	72	66	145
<b>Grand total</b>	<b>759</b>	<b>1015</b>	<b>1350</b>	<b>1585</b>	<b>1184</b>	<b>1383</b>	<b>1488</b>	<b>1615</b>	<b>1765</b>	<b>2083</b>	<b>2038</b>	<b>2517</b>	<b>2212</b>

1/ DFTQC is Department of Food Technology and Quality Control.

2/ Fertilizer subsidy includes both transport and price subsidy of fertilizers but excludes the subsidy expenditure claimed by AIC and settled through government decisions.

3/ Corporate subsidy refers to capital and operational support to government-owned corporations.

4/ Credit subsidy is calculated based on the subsidy received by ADBN from the government.

5/ Others include outlays on planning, monitoring, coordination etc.

Source : Statements of estimated expenditures, Ministry of Finance; Budget Expenditure Statement, MoAC (1998/99-99/00) and subsidy utilization record, ADBN.

Table 2: Budgetary support to agricultural research by commodity  
(In 000 Rs. excluding direct funding)

Year	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00
Rice	4399	4284	4688	4160	4450	5580	6040	8050	9450	9659	9696	14559	23815	20663	28451
Maize	2235	2459	2597	3460	3520	3740	3940	4600	6100	8617	8608	9813	10998	11880	15793
Wheat	4012	4126	4520	5070	5410	6230	6580	7000	8400	14819	15756	16837	21568	22677	28901
Potato	913	1105	1789	3535	1314	1160	1300	1392	2072	3611	3783	5155	5197	6806	7660
Hill crops <sup>1/</sup>	414	540	766	1715	1144	1115	2780	2094	3850	5945	6050	7502	10433	9711	11417
Green legumes	239	660	1304	1364	1135	1264	1240	1649	3250	4960	4925	6299	7971	7832	10158
Oilseed cash crops	1286	1440	1560	1755	3359	1253	1895	2582	3542	5283	4183	5514	6544	6577	8028
Cash crops <sup>2/</sup>	1946	2187	2777	3240	3520	3680	4050	5897	4293	4980	5632	7175	8007	7111	8557
<i>Sub-total crops</i>	15444	16801	20001	24299	23852	24022	27825	33264	40957	57874	58633	72854	94533	93257	118965
Fruits	4045	5826	4909	2060	2240	2390	2780	5600	6212	9187	10025	12427	15545	14557	19518
Vegetable	1358	1473	1694	1850	1970	2110	2360	4900	5222	3311	3511	4392	9326	8518	10092
Zinger	95	169	212	1280	1660	1970	2050	2280	2430	2254	1254	3401	2458	2232	2299
<i>Sub-total horticulture</i>	5498	7468	6815	5190	5870	6470	7190	12780	13864	14752	14790	20220	27329	25307	31909
Fisheries	12072	7690	12484	10120	10480	10790	11050	11504	15359	21658	26845	21458	26278	24276	27802
Cattle/buffalo	2439	2821	3795	2010	2130	2290	2680	3000	3213	4711	5109	5953	6973	6686	7618
Sheep/goat	1463	1581	1674	2055	2622	2472	2780	3674	4500	5151	4851	5276	6717	6053	7194
Swine/avian	1480	1565	1670	1690	2080	2450	3090	4700	5100	3156	5654	4697	3950	4327	5169
Animal nutrition <sup>3/</sup>	422	1060	9555	1030	1150	1340	1540	3000	5887	6407	8388	8093	13155	11520	10308
<i>Sub-total livestock</i>	17876	14717	29178	16905	18462	19342	21140	25878	34059	41083	50847	45477	57073	52862	58091
Disciplinary research	7750	8634	9621	11880	13560	14040	14610	15080	18600	17753	22920	23958	23336	28401	30317
NARC Head Office	5740	6270	6740	21553	19718	14492	24269	10200	24056	22290	20406	22547	31952	27657	54115
<i>Sub-total others</i>	13490	14904	16361	33433	33278	28532	38879	25280	42656	40043	43326	46505	55288	56058	84432
<b>Grand Total</b>	<b>52308</b>	<b>53890</b>	<b>72355</b>	<b>79827</b>	<b>81462</b>	<b>78366</b>	<b>95034</b>	<b>97202</b>	<b>131536</b>	<b>153752</b>	<b>167596</b>	<b>185056</b>	<b>234223</b>	<b>227484</b>	<b>293397</b>

1/ Hill crops – millet and barley

2/ Cash crops - tobacco, sugarcane and jute

3/ Animal nutrition- pastures, forage and feeds

Source: Planning Division, MOAC.

**Table 3: Value of production of individual agricultural commodities, Nepal**  
(million Rs)

Commodities	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	Growth (%)
Paddy	28574	28793	33367	34941	30552	31207	1.8
Maize	10586	11101	11987	15590	16203	14069	5.9
Millet	2294	2347	2487	2649	2563	2587	2.4
Wheat	8026	7832	9771	13963	11774	10742	6.0
Barley	334	338	290	282	276	282	-3.3
By-products	3125	3493	3984	4681	4887	5003	9.9
<i>All cereals</i>	<i>52939</i>	<i>53904</i>	<i>61886</i>	<i>72106</i>	<i>66245</i>	<i>63890</i>	<i>3.8</i>
Potato	6269	6366	9554	10507	10041	15169	19.3
Oilseed	288	330	353	363	305	373	5.3
Tobacco	45	31	33	33	35	34	-5.5
Sugarcane	1710	2009	2307	2629	3074	2473	7.7
Jute	525	583	585	592	639	848	10.1
<i>All major cash crops</i>	<i>8837</i>	<i>9319</i>	<i>12832</i>	<i>14124</i>	<i>14094</i>	<i>18897</i>	<i>16.4</i>
Tea	46	52	79	94	123	143	25.5
Cotton	4	2	2	2	1	1	-24.2
Coffee	1	2	2	3	4	7	47.6
Cocoon	2	1	2	2	3		10.7
Honey	10	19	29	36	38		39.6
<i>All minor cash crops</i>	<i>63</i>	<i>76</i>	<i>114</i>	<i>137</i>	<i>169</i>	<i>151</i>	<i>19.1</i>
Cardamom	770	890	1019	1567	1496	1545	14.9
Ginger	936	982	1145	1237	1519	1055	2.4
Garlic	188	205	322	642	777	654	28.3
Turmeric	74	100	143	196	253	303	32.6
Chillies	240	242	326	455	443	476	14.7
<i>Spice crops</i>	<i>2208</i>	<i>2419</i>	<i>2955</i>	<i>4097</i>	<i>4488</i>	<i>4033</i>	<i>12.8</i>
<i>Pulses</i>	<i>8193</i>	<i>6850</i>	<i>9130</i>	<i>8494</i>	<i>8895</i>	<i>9235</i>	<i>2.4</i>
Citrus	1517	1809	1815	2323	2799	3490	18.1
Deciduous fruits	1609	1665	1710	1954	2271	2451	8.8
Tropical fruits	5917	4936	7140	7452	9260	8038	6.3
<i>All fruits</i>	<i>9043</i>	<i>8410</i>	<i>10665</i>	<i>11729</i>	<i>14330</i>	<i>13979</i>	<i>9.1</i>
Vegetables	14202	17860	20379	20300	21868	23219	10.3
Meat	12147	13584	15139	16683	17720	19133	9.5
Milk	16795	18620	20118	21811	23999	25343	8.6
Egg	1489	1583	1690	1797	1918	2062	6.7
Wool	76	82	81	84	82	76	0.0
<i>Livestock products</i>	<i>30507</i>	<i>33869</i>	<i>37028</i>	<i>40375</i>	<i>43719</i>	<i>46614</i>	
<i>Fishery</i>	<i>1502</i>	<i>1707</i>	<i>1851</i>	<i>2540</i>	<i>2755</i>	<i>3120</i>	<i>15.7</i>
<b>Grand total</b>	<b>127494</b>	<b>134414</b>	<b>155840</b>	<b>173902</b>	<b>176563</b>	<b>183138</b>	<b>7.5</b>

Source: Agri-Business Promotion and Statistics Division, MoAC, February 2003.