

**APPROACHES AND TOOLS TO PROMOTE BETTER
INTERAGENCY COORDINATION**

TO

DESIGN AND IMPLEMENT SARD-M INTERVENTIONS

**A Case of
National Fertilizer Policy of Nepal**

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List of Acronyms

ADB	Asian Development Bank
AIC	Agricultural Inputs Corporation
AICL	Agricultural Inputs Company Limited
APP	Agriculture Perspective Plan
APS	Ammonium Phosphate Sulphate
A/S	Ammonium Sulphate
CDO	Chief District Officer
CDR	Central Development Region
C/RATC	Central and Regional Agricultural Training Centre
DADO	District Agricultural Development Office
DAP	Di-ammonium Phosphate
DAO	District Administration Office
DFID	Department for International Development
DOA	Department of Agriculture
FCO	Fertilizer Control Order
FI	Fertilizer Inspector
FU	Fertilizer Unit
FWDR	Far Western Development Region
FY	Fiscal Year
GDP	Gross Domestic Product
IFA	International Fertilizer Association
IPNS	Integrated Plant Nutrient Management System
2KR	Kennedy Round 2
LC	Letter of Credit
MOAC	Ministry of Agriculture and Cooperatives
MOF	Ministry of Finance
MOLJ	Ministry of Law and Justice
MOP	Muriate of Potash
NARC	Nepal Agricultural Research Council
NBSM	Nepal Bureau of Standard and Meteorology
NESS	Nepal Environment and Scientific Services
NFP	National Fertilizer Policy
NPC	National Planning Commission
RAD	Regional Agricultural Directorate
RSTL	Regional Soil Testing Laboratory
SAPL	Second Agriculture Programme Loan
SARD-M	sustainable agriculture and rural development in mountain areas
SC	Steering Committee
SMD	Soil Management Directorate
SSMP	Sustainable Soil Management Project
SSP	Single Super Phosphate
STCL	Salt Trading Company Ltd
STSS	Soil Testing and Services Section
ToR	Terms of Reference
WC	Working Committee

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I strongly believe that the appropriate modalities/options recommended in this report will be useful to promote better interagency coordination during the implementation of the National Fertilizer Policy 2002 in future.

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Executive Summary

Co-ordination among different stakeholders is an important aspect while formulating and implementing policies. To study the coordination mechanisms among the stakeholders, a four-year project on sustainable agriculture and rural development in mountain areas (SARD-M) was implemented. The studies identified inadequate interagency coordination in designing and implementing policy interventions related to sustainable agriculture and rural development as the priority issues on SARD-M. The regional workshop held in Kathmandu made specific recommendations on fertilizer related issues in case of Nepal. Therefore, the National Fertilizer Policy of Nepal has been selected as a representative for evaluation to seek the answer to what extent the national policies converge or diverge with SARD-M framework.

The National Fertilizer Policy formulation process is studied in detail for the purpose. The policy was formulated by adopting top-down approach. The initiation was taken by the Finance Committee of the Council of Ministers and the major chunk of the work was done by the Fertilizer Unit of MOAC. The consultations made while formulating the policy were not adequate. The policy was drafted by the Working Committee formed under the coordination of the Chief of FU and discussed at Steering Committee in presence of the Hon'ble Minister for Agriculture and Cooperatives and the Hon'ble Member of National Planning Commission to give it a final shape. The policy was revised as per the recommendation of this discussion and sent to the Council of Ministers for approval. It was finally approved by the Council of Ministers on 28 February 2002 and brought under implementation.

The environment and arrangement for the effective implementation of the policy are studied. Similarly, the roles and responsibilities of different actors are discussed. The issues in fertilizer marketing are also studied to draw the inference. Review and analysis of the policy in the light of its major provisions, interagency coordination mechanism, monitoring and evaluation system, and strengths and weaknesses have been done. From the analysis, gaps and inconsistencies in the policy are identified. The outcomes and effects of the policy till date are also explored. On the basis of these findings, appropriate modalities/options for better interagency coordination have been suggested. Recommendations have been made to assign coordinating roles to the Department of Agriculture for successful implementation of the policy. It is also recommended to widen the roles and responsibilities of Custom Offices, Revenue Investigation Offices, CDO and Police while amending the draft of proposed Fertilizer Act and the existing rules and regulations.

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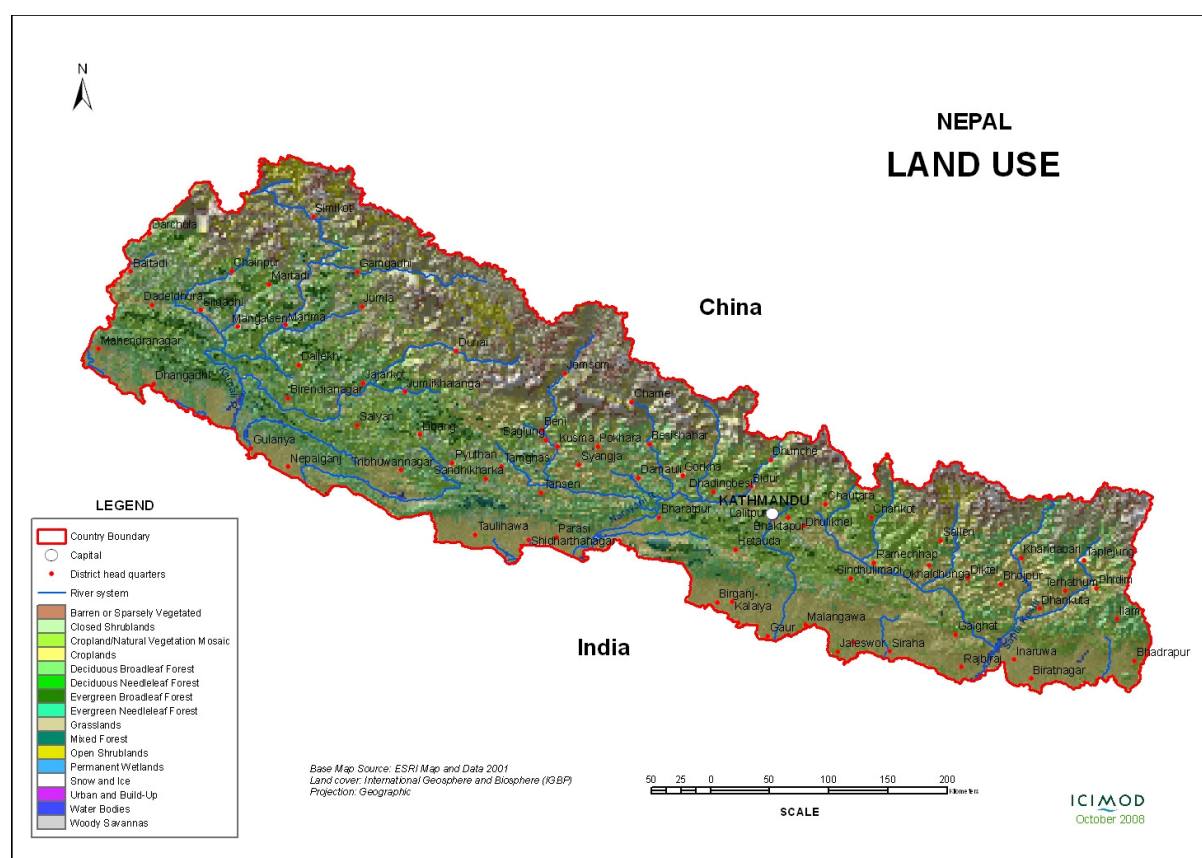
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1 Introduction

1.1 Background

Nepalese agriculture is largely concentrated in the hills and mountains specificities, characterized by vulnerable, fragile, remote ecosystem. This is one of the most important sectors in terms of employment generation and its contribution to the Gross Domestic Product (GDP). Growth of agricultural sector depends largely on the development of other allied sectors like roads, irrigation, market infrastructure, processing industries etc. Therefore, policy formulation and implementation in this sector also requires the involvement of many stakeholders. To achieve the intended objectives, active participation and constructive suggestions/feedbacks of each stakeholder is necessary during policy formulation as well as its successful implementation. However, if the coordination among stakeholders is weak, the policy implementation will also become weak. This can result to a policy failure and thereby retards the development processes.



For the development of agricultural sector, several policies have been developed and implemented in the past. Among them, formulation and implementation of National Fertilizer Policy (NFP) is an important one. In comparison to closest neighbors, use of fertilizer in Nepal is low. Therefore, there is immense scope of increasing agricultural production in Nepal by increasing the fertilizer consumption. APROSC and JMA Inc (1995) estimated that 7.6 to 12 per cent growth rate in fertilizer use would contribute 45 per cent of the modest growth in total agricultural outputs in 20 year's duration. Considering the great contribution of increased fertilizer use in increasing agricultural production, the Agriculture Perspective Plan (APP) envisaged a favourable policy environment and a well developed institutional structure in the private sector to increase the tonnage of fertilizer use substantially.

Monopoly of Agricultural Inputs Corporation (AIC) was considered a major constraint to increase the fertilizer use. To break this monopoly and to develop institutional structure in the private sector, fertilizer trade was deregulated in 1997. Before this, Fertilizer Unit (FU)

was established in the Ministry of Agriculture and Cooperatives (MOAC) to undertake the job of policy matters as well as to ensure the supply of quality fertilizers in the markets. The AIC was privatized and the price subsidy on fertilizer was removed in later years. To accommodate all these changes in fertilizer sector, the process of formulating fertilizer policy was begun in 2000.

The National Fertilizer Policy of Nepal was approved in 2002 to support agricultural production by ensuring the supply of quality fertilizer. The principle aim of implementing the policy is to enhance agricultural productivity through improvements in soil fertility for better production and thereby contributing to the national goal of poverty reduction (GON, 2003). The policy envisaged the involvement of farmers, traders, laboratories and different Government authorities for the supply of quality fertilizers, their use and the enhancement of agricultural productivity.

1.2 Objectives

The overall objective of this assignment is to identify, assess, and formulate tools and approaches that help in improving interagency coordination during the implementation of NFP. However, the specific objectives are to;

- i. study and document the policy formulation process and policy environment of the NFP,
- ii. analyze the strengths and weaknesses and assess the gaps and inconsistencies in the NFP, and
- iii. suggest practical approaches and tools to promote better interagency coordination for effective implementation of the NFP.

1.3 Rationale

Agricultural growth relies on the use of fertilizers very heavily. Due to this reason it is considered as one of the four priority inputs in the APP. Fertilizer use in Nepal was 20 kg nutrient per hectare in 1991/92. The application rate was one-third to one-quarter that of Bangladesh, Pakistan and Sri Lanka, and 10 per cent that of China. Therefore, fertilizer application rate in Nepal could be considered significantly low in the region. It could be concluded that the potential of increasing agricultural production through increased fertilizer use is very high. Fertilizer use has been projected to reach 131 kg nutrient per hectare by the end of 2014/015, and roughly half of the incremental output in agriculture would be attributable to the increased fertilizer use.

Before implementation of NFP, fertilizer was subsidized and the AIC had sole responsibility of importing and distributing fertilizers all over the country. It was difficult for the Government to allocate sufficient budget to subsidize fertilizers. It was also difficult for the AIC to establish efficient distribution network all over the country to meet the farmers demand on time. As a result limited supply was the main constraint of fertilizer use. In such a situation, favourable policy environment and a well-developed institutional structure in the private sector was indispensable for substantial increments in the tonnage of fertilizer use (APROSC and JMA Inc, 1995). Therefore, fertilizer policy was developed from the implementation of the APP in 1997.

The NFP can be evaluated to find out its contribution in the sustainability of agriculture and the effects of it in agricultural growth and rural development. This policy is related to different stakeholders and efficiency of each actor in performing its role is important for its successful implementation in achieving goal of increased output necessary for poverty reduction. It become a necessity to seek the answer to what extent the NFP converge or diverge with the aim of increasing fertilizer use. Also, the study will suggest the approaches and tools to make policy implementation successful by studying existing interagency coordination mechanism in the policy as well as the coordination in practice.

1.4 Organization of the report

The report is divided into seven chapters. Chapter 1 covers introduction, objectives, and rationale of the assignment. Chapter 2 consists of the policy formulation process. The formulation and implementation processes of the NFP 2002 are discussed in this chapter. In Chapter 3, the policy environment for the implementation of the NFP is presented. Chapter 4 consists of the review and analysis part of the study. The interagency coordination mechanism at different levels is discussed in this chapter. Findings of the study are presented in Chapter 5. Recommendations and conclusion of the study are presented in chapter 6 and 7, respectively.

2. Policy Formulation Process: National Fertilizer Policy

2.1 Need identification

The need to formulate NFP arose in order to provide a broader framework to the initiatives taken after the deregulation of fertilizer trade in November 1997. To ensure the participation of private sector in fertilizer trade, the MOAC developed a "Policy and guidelines to involve the private sector in fertilizer trade" which was approved in December 1997. Fertilizer price was decontrolled in October 1999 and became a free entity thereafter. Fertilizer quality control was a major issue after its deregulation. To maintain the supply of quality fertilizers in the market, Fertilizer Control Order (FCO), 1999 was promulgated under the Essential Commodities Control (Right) Act, 1961. With the promulgation of FCO, fertilizer was included under the category of essential commodities. Later on, Fertilizer Guidelines was approved by the Government in July 2000 according to the provision of Article 34 of the FCO, 1999.

The meeting of the Finance Committee of the Council of Ministers held in 17 October 2000 directed the Ministry of Finance (MOF), MOAC and the National Planning Commission (NPC) to develop a policy by taking long term vision on fertilizer production, import and distribution emphasizing that agriculture production should not decrease due to shortage of fertilizer supplies from the AIC and the private sector as well. The reasons behind this direction were; chemical fertilizers were not produced inside the country, the international price of fertilizers fluctuated frequently and the Government had removed the price subsidy from fertilizers sold in domestic market.

2.2 Situation analysis

The environment was favourable to bring the NFP in 2002. Nepal was in the process of entering into the open market economy. Privatization of Government owned companies was taking momentum. The Government had just broken the monopoly of the AIC in fertilizer trade. It was also in the process of privatizing the AIC. The involvement of private sector in fertilizer business was encouraging.

Deregulation of fertilizer trade was a major breakthrough in increasing the availability of fertilizers. Due to the active involvement of private sector, the availability of fertilizer significantly increased in major markets of the country. But there were chances of uneven distribution between the market centers and remote and inaccessible areas which could disbalance the food security situation. The small farmers and the farmers living in remote areas would be the sufferers if they were unable to get fertilizers according to their need and at affordable prices. There was pressure on the Government from different sectors to take long term vision to protect the rights of such farmers.

Emergence of economic globalization and liberalization through open market economy pressurized to alter fertilizer policy. Considering the fact the donor communities were also favored to develop the fertilizer policy. The review mission of the Second Agriculture Program Loan (SAPL) from the Asian Development Bank (5-9 December 2000) suggested developing appropriate strategies for sustainable and regular supply of chemical fertilizers in Nepal. Similarly, the Department for International Development (DFID), UK showed interest to support the preparation of fertilizer policy.

2.3 Committee formation

As per the recommendation of the Finance Committee of the Council of Ministers, a Working Committee (WC) of five members and a Steering Committee (SC) of eight members were formed in 20 December 2000 to prepare policy documents on efficient fertilizer distribution. The Chief of Fertilizer Unit (FU) was the Coordinator of the WC and there were representatives from Planning Division of the MOAC, Agriculture and Forestry Division of the

NPC, the MOF and Administration Division of the MOAC. The steering Committee was formed under the chairmanship of the Secretary of MOAC. Joint Secretary from Planning Division of the MOAC, Joint Secretary from Monitoring and Evaluation Division of the MOAC, Joint Secretary from Budget and Program Division of the MOF, Joint Secretary from Agriculture and Forestry Division of the NPC, General Manager of the AIC, General Manager of the Salt Trading Company Ltd (representing the private traders) were the members of the SC. The Chief of FU (Coordinator of the WC) was the Member Secretary of the SC. These committees were heavily dominated by Government representatives and the representation of people who demand fertilizers was ignored. The representation of private sector was from the Salt Trading Company Ltd (STCL) which was not a fully private company. The logic behind the representation of STCL from private sector was that it should fulfill all the requirements like other private traders in fertilizer business.

2.4 Setting goals and objectives

The WC set goals and objectives of the policy framework and finalized after consultation with the SC. The set goal and objectives were in line with the direction of the Finance Committee. Meantime, the researchers/scientists working for agricultural research and development were advocating for Integrated Plant Nutrient Management System (IPNS) to maintain the sustainability in agriculture production and food security situation. It was considered an underlying principle while setting the goal of fertilizer policy.

Although the policy was revisited several times before reaching the final stage, the goal set in the beginning remained unchanged. The principal goal of the policy is to enhance agricultural productivity through improvements in soil fertility, and thereby contribute to the national goal of poverty reduction. The objectives set in the initial draft were;

- to manage the policy and infrastructure conditions for enhancing chemical fertilizer consumption; and
- to promote integrated plant nutrient management system for the efficient and balanced use of chemical fertilizers.

2.5 Drafting the policy

Based on the Terms of Reference (TOR), the WC coordinated by the Chief of FU prepared a preliminary draft of the fertilizer policy by reviewing the existing rules, regulations and policies of Government of Nepal related to fertilizers; and also in-depth review of relevant policies of neighboring countries (particularly India and Bangladesh). During the review the WC critically analyzed various publications related to fertilizers. The WC also consulted importers, producers, traders, farmers and other concerned stakeholders; by conducting field visits; and focus group discussion. The draft was submitted to the SC for their review and comments. This version of the policy was basically a chemical fertilizer policy which was silent on other types of fertilizers (organic and bio fertilizers) that were on use.

2.6 Consultation, feedback and revision on the content

The WC members made field visits to consult the farmers, fertilizer dealers, producers, and Government staff working at field level before preparing the draft. Suggestions obtained from these stakeholders were taken into consideration while drafting the policy. The WC prepared the draft of chemical fertilizer policy and submitted to the SC. The SC also organized interaction and discussion programs with concerned stakeholders at various levels to take necessary feedbacks. Suggestions and feedbacks of fertilizer dealers, importers (public and private), quality controllers, farmers and specialists were also incorporated in the policy.

It is necessary to bring the policy under the notice of concerned minister for approval before its submission to the Council of Ministers. Therefore, a meeting was held under the chairmanship of Hon'ble Minister for Agriculture and Cooperatives on 24 January 2002 to

discuss on the content of the proposed fertilizer policy. Hon'ble Minister of State for Agriculture and Cooperatives and Hon'ble Member of NPC were also present in this meeting. The meeting suggested making the policy more holistic into a National Fertilizer Policy rather to confine only to chemical fertilizers. The meeting provided valuable suggestions, comments and feedbacks, which were incorporated into the policy document by a team of the Chief of Policy Analysis Section and the Chief of FU.

2.7 Formal approval

The NFP 2002 was approved by Hon. Minister for Agriculture and Cooperatives on 14 February 2002 and was then forwarded to the Council of Ministers for final approval. The National Fertilizer Policy 2002 was finally approved by 71st meeting of the Council of Ministers of the then His Majesty's Government of Nepal on 28 February 2002. Details of formulation and approval of NFP is presented in Figure 1.

2.8 Policy implementation

NFP 2002 is oriented towards the efficient and balanced application of plant nutrients and towards the promotion of IPNS for sustainable growth in agriculture production. The policy was instantly implemented after its approval from the Government. The first step taken was to make the policy publicly known.

National Fertilizer Policy Formulation

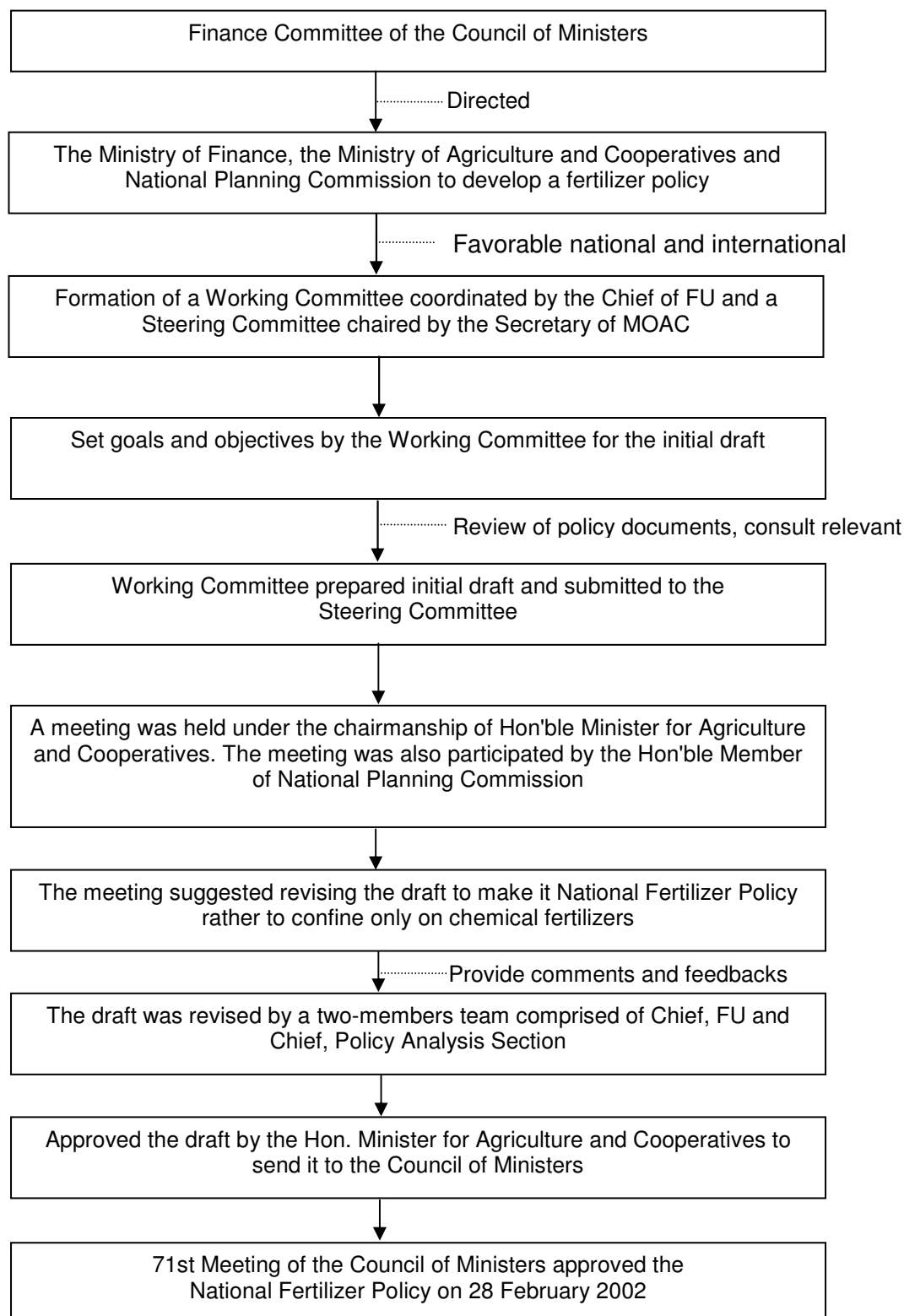


Figure 1: Procedure followed in formulating the National Fertilizer Policy

After the approval, the MOAC circulated the NFP to parliamentarians, offices under the MOAC, other relevant agencies and to interested people. The information was also maintained on the website of FU. The policy was also included in the training curriculum of Fertilizer Inspectors (FI).

The MOAC instructed Nepal Agricultural Research Council (NARC), Department of Agriculture (DOA), Program Directorates under the DOA, Regional Agricultural Directorates (RAD), Central and Regional Agricultural Training Centers (C/RATC), Soil Testing and Services Section (STSS), Regional Soil Testing Laboratories (RSTL) and District Agriculture Development Offices (DADO) to consider the NFP while preparing annual program and budget for FY 2002/03. GON (2002) expressed commitments to implement the NFP 2002 effectively to ensure the supply of fertilizer and to make the distribution system transparent, competent and trustworthy. The MOAC has made commendable attempts to implement the policy during the past five years.

3. Policy Environment

3.1 Legislative environment for the implementation of NFP

Fertilizer is kept under the category of essential commodities. Essential Commodity Control (Right) Act, 1961 is the main legal base for the transaction of fertilizers and their quality control. Fertilizer Control Order (FCO), 1999 and Fertilizer Guidelines, 2000 were approved in the spirit of Essential Commodity Control (Right) Act, 1961. The order and guidelines are the specific legal bases for fertilizer trade. They provided specific code of conduct for manufactures, importers, and dealers to ensure the supply of quality fertilizers (Manandhar and Khanal, 2005).

Since Essential Commodity Control (Right) Act, 1961 was enacted quite earlier and was basically prepared for other commodities. Hence, a separate act for fertilizer was felt essential. The need of such act was realized at all levels. The meeting of Natural Resource Committee of the House of Representatives held on 16 February, 2000 decided to give direction to the MOAC to prepare appropriate legislative base to discourage import and distribution of low quality and adulterated fertilizers that entered into Nepal illegally. By utilizing the human resources of MOAC, the ministry prepared a draft of Chemical Fertilizer Management Act on 5 September 2001. Later the act was revised and renamed as Fertilizer Management Act, 2002. From the decision of 29 April 2002, the draft act was sent to the Ministry of Law, Justice and Parliamentary Affairs for its approval to send to the Parliament. Due to the dissolution of the Parliament (House of Representatives) in 22 May 2002, it could not move ahead. It was stated that an act would be put into place to ensure the supply, management and quality control of chemical fertilizer. However, the statement could not be materialized into reality in five-year duration.

3.2 Institutional arrangement

Fertilizer policy is a sub-sector policy of agriculture sector. The Fertilizer Unit established at MOAC is the apex body for policy formulation and implementation in the sub-sector. The chief of FU has certain legal rights provided by the FCO. The FU works in close coordination with the Policy Analysis Section of the MOAC while formulating new policies and revising existing policies related to fertilizers. DOA and DADOs are responsible mainly for policy implementation. Fertilizer Inspector (FI) working in each DADO has been assigned the roles and responsibilities of maintaining the supply of quality fertilizers in the district. FI should take help of local administration in performing their regular duties because the cases against the wrongdoers are filed at District Administration Office (DAO). The cases that could not be decided at DAO should be filed at court with the help of District Attorney. Six soil laboratories under the DOA, laboratories of Nepal Bureau of Standard and Meteorology (NBSM) and Nepal Environment and Scientific Services (NESS) accredited by NBSM are authorized for fertilizer testing and analysis. For effective implementation of fertilizer policy, fertilizer importers, manufactures and dealers/retailers all should perform their specified duties. Custom offices are the first ones who check the legality of imported fertilizers (Figure 2).

market. In this context, Manandhar and Khanal (2005) summarized following roles and responsibilities of different actors.

3.4.1 Ministry, Department and DADO

The MOAC, and DOA have roles and responsibilities of formulating and updating fertilizer policies. They should also facilitate the implementation of policies, rules and regulations for the supply of quality fertilizer in markets. DADOs are responsible for monitoring fertilizer supply situation in the District. They also conduct various activities like training and interaction programs for farmers and fertilizer dealers/retailers to create awareness on balanced fertilization, IPNS and the use of quality fertilizer.

3.4.2 Fertilizer Inspectors

The MOAC has extended the quality control mechanism up to district level by appointing FI in each district. In order to avail quality fertilizers to farmers, FIs are assigned following roles, responsibilities and authorities:

- Monitoring the supply, distribution and stock of fertilizers at district level.
- Enquire any manufacturer, importer or dealer to submit records on production, import, distribution or stock of fertilizers.
- Take samples of fertilizers or raw materials used in manufacturing fertilizers from dealer/retailer's counter, go-down or manufacturer's place.
- Conduct further investigation, if any person or agency's performance is against the law or the act.
- File case if any person or agency found manufactured or imported fertilizers against the FCO.

3.4.3 Local administration

Chief District Officer (CDO) of District Administration Office has right to look after the cases that comes under the scope of Essential Commodity Control (Right) Act, 1961. FIs should take the help of local administration in performing their duties and filing cases against the malpractioners.

3.4.4 Fertilizer testing and analyzing services

As provisioned in the FCO 1999, there are seven authorized laboratories and one accredited laboratory for testing and analyzing quality of fertilizers. These laboratories test reference samples as well as complaint samples. If fertilizers are found sub-standard, legal action can be taken on the basis of analytical reports.

3.4.5 Fertilizer importers

- Only those fertilizers can be imported which have approved specifications.
- Following certificates are mandatory for importers while importing fertilizers from abroad:
 - (i) Manufacturer's certificate or certificate of origin.
 - (ii) Load port certificate from an independent surveyor.
 - (iii) Unload port certificate.

Manufacturer's certificate and load port certificate from the country of export should be presented at the entry point (custom office) in Nepal. Unload port can be the custom entry point or importer's go-down (GON, 1999). There are accredited independent surveyors to issue the unload port certificate.

Load port certificate should match with unload port certificate in terms of its tolerance limit. Packaging and labeling of imported fertilizer should be as per the FCO, 1999 standard. Each importer should submit monthly report to the FU of MOAC on import, distribution, stock and price of fertilizers (GON, 2000).

3.4.6 Manufacturers

- Fertilizer manufacturing companies should register fertilizer in the FU, MOAC before manufacturing. For this, fertilizer companies should submit application to the FU as per the FCO, 1999.
- Periodic reports should be submitted to the FU on production, sale, stock and price of fertilizers.
- The registration certificate should be renewed by the producers once in every three years.

In Nepal, three mixing and blending companies are in operation at present. They have registered different grades of fertilizers in the FU but at present they are producing only the 20:20:0 and 20:20:10 NPK mixed fertilizers.

3.4.7 Independent surveyors

Importers and manufacturers should obtain certificates from independent surveyors. The Surveyor verify quality, quantity, labeling and packaging standard of fertilizers based on the standards as stated in the FCO, 1999. For this purpose, MOAC has accredited the following surveyors:

- Investigators, Legal Advisors and Surveyors, New Road Gate, Kathmandu.
- Nepal Environmental and Scientific Services (P.) Ltd., Thapathali, Kathmandu.
- Sata Engineering Associates, Dugambahil, Kathmandu.
- International Claim Bureau, Thapathali, Kathmandu.

3.4.8 Dealers/retailers

- Any firm or person wishing to sell fertilizer needs to secure a certificate of registration from the respective DADO. The validity of registration certificate lasts for two years from the date of registration or renewal.
- As per the provision of Fertilizer Guidelines, 2000, every dealer should submit monthly report to DADO or to Service Center/Sub-Service Center on fertilizer transactions.

3.5 Major issues in fertilizer marketing

There are some issues in fertilizer marketing which affect the effective implementation of NFP 2002. The issues are related to price, quality, transport subsidy, availability, distribution and use of fertilizers.

3.5.1 Fertilizer Price

Before deregulation, the price of fertilizer was low but the cost of getting fertilizer was very high. Farmers were found moving to the major market centres in search of fertilizer in the main crop growing season. As a result farmers had to hire substitute laborers to work in the fields during their absence or pay (wage, food and accommodation) for the laborers to purchase the fertilizers. These costs were over and above the market price of fertilizer making fertilizer more expensive.

In Nepal, the price of fertilizers is decontrolled and is determined by the market forces. The price of fertilizers in domestic markets depends mainly on the international price. As provisioned in the Fertilizer Guidelines 2000, the importers should report the wholesale prices of fertilizers to the FU on monthly basis. The source of international price is International Fertilizer Association (IFA). Another important source of international price is the amount quoted in Letter of Credit (L/C) which the FU, MOAC receives from commercial banks. The FU compiles the domestic as well as the international prices obtained from different sources and make available for public.

In contrast to Nepal, India is maintaining relatively a constant price of chemical fertilizers by providing direct and indirect subsidies. The comparative prices of Urea, DAP and MOP in Nepal, India and international markets are presented in Table 1.

Table 1: Comparative prices of fertilizers in Nepal, India and international markets

Price: US \$ per ton

Year	Urea			DAP			MOP		
	Int	India	Nepal	Int	India	Nepal	Int	India	Nepal
1998	87	103	130	195	233	326	89	104	164
1999	65	86	140	202	233	358	102	104	244
2000	78	93	157	149	233	358	102	104	244
2001	122	99	245	156	250	342	99	120	244
2002	104	100	237	153	263	334	98	125	239
2003	117	99	235	156	263	327	95	125	239
2004	156	104	268	213	263	389	94	125	239
2005	215	104	343	231	263	446	124	125	239
2006	282	103	390	340	263	457	220	125	239

Note: 1. Average price for Nepal is calculated from the wholesale price fixed by different importers including AICL.

2. International price- taken from January of each year.

Source: 1. FU, MOAC: for domestic and international price.

2. Economic Survey different years (<http://indiabudget.nic.in>)

3. Ministry of Fertilizers and Chemicals (<http://fert.nic.in>)

Price of a metric ton Urea, DAP and MOP in the beginning of 2006 in Nepal were US \$287, \$194 and \$114, respectively higher than India. Due to the high price differences between India and Nepal, a large amount of urea is reported smuggled to Nepal from India. This price difference across the fertilizers also favors unbalanced application of fertilizers which significantly reduces agricultural productivity in long run.

Record shows that price of Urea and DAP in Nepalese markets have been increased in the similar trends of price hike in international markets. However, the price of MOP has remained stagnant for last five years (2002 - 2006) despite sharp increase in price in international markets. This is due to the fact that the use of MOP by Nepalese farmers is low and the amount received under Kennedy Round 2 (2 KR) grant assistance from the Government of Japan in 2000/01 and 2001/02 was sufficient to meet the domestic demand for the last five years.

The pricing system differs according to the type of importers. Private traders fix the price by adding transportation cost, operation and management cost including profit on the actual price paid. In AICL, price of fertilizers is fixed from the meeting of Board of Directors by considering the direct and indirect costs incurred during the trade. The Government fixes the upper ceiling of the fertilizer price received under grant assistance (2KR) before bidding. The price of fertilizers received from India under subsidized rate is also fixed by the Government. As a result, there are different prices of the same commodity in the market which creates

dilemma for the consumers. The discrepancy in prices of fertilizers in the market in September 2006 is presented in Table 2.

Table 2: Price comparison of different fertilizers at Birgunj in September 2006

Category	Price: NRs per ton	
	Urea	DAP
Private traders (Manoj International Traders)	24500	28000
2KR fertilizer	24000	
Indian subsidized fertilizers	14400	25000

Source: FU, MOAC

3.5.2 Quality of Fertilizer

The job of fertilizer quality control rests on the part of the Government institutions after the deregulation of fertilizer trade. The principal job of FU of the MOAC at present is to ensure the supply of quality fertilizers to the farmers.

Nepal has a long open border (East, South, and West) with India. The trans-boundary issue has greater implications in fertilizer trade between Nepal and India. Coordination among trans-agency is also vital in regular supply of fertilizers and quality monitoring. Due to the price differences between India and Nepal, illegal flow of fertilizers from India becomes common, especially when the relative prices are higher in Nepal. It is estimated that about two-thirds of the total consumption of fertilizer in Nepal is met by illegal import (GON 2003a). The proportion of illegal import has increased in later years. Price difference not only attract higher demand but also flow of low quality and adulterated fertilizers from India to Nepal.

As provisioned in FCO, FU, FI and soil testing laboratories are the main actors involved in fertilizer quality control. The FU, DADO and soil laboratories collect fertilizer samples from different parts of the country and analyze them in the laboratories. Also, some importers, traders, cooperatives and farmers send fertilizer samples voluntarily to the laboratories for testing and analysis. The FU maintains the record of analysis obtained from various sources. A summary of the result of fertilizer analysis from 9/2/2000 to 25/8/2006 is presented in Table 3.

Table 3: Summary of fertilizer samples analyzed from 9/2/2000 to 25/8/2006

SN	Fertilizer	Total Samples	Substandard Samples	
			No.	Per cent
1	Urea	303	127	41.91
2	Di Ammonium Phosphate (DAP)	172	86	50.00
3	Muriate of Potash (MOP)	91	23	25.27
4	Ammonium Sulphate (A/S)	24	7	29.17
5	Ammonium Phosphate Sulphate (APS)	10	3	30.00
6	Single Super Phosphate (SSP)	9	3	33.33
7	Mixed fertilizers	69	40	57.97
Total		678	289	42.63

Source: FU, MOAC

Sub-standard fertilizer samples in Table 3 are differentiated only on the basis of nutrient content below the tolerance level. It is apparent from the table that the quality problem is severe in Urea, DAP and Mixed fertilizers in comparison to others. Unfortunately, these are the most widely used fertilizers. In case of Urea, a large number of substandard samples contained more than 42 per cent of nitrogen but in case of DAP most of the substandard samples were mixed fertilizers containing less than 40 per cent of nitrogen and phosphorus

in total. Nearly 58 per cent of the mixed fertilizer samples were found substandard. Also, the nutrient content in substandard samples was found quite low. MountDigit (2006) pointed out that the nutrient element found in mixed fertilizer samples was a serious offense because farmers paid full cost for the nutrient as mentioned in the label. In addition, most of the mixed fertilizers were brought to the market without renewing their registration. Therefore, it also recommended penalizing the producers of such fertilizers.

3.5.3 Transport subsidy

The Government is providing transport subsidy on fertilizer to 26 remote districts even after the deregulation. Taplejung, Sankhuwasabha, Bhojpur, Terhathum, Okhaldhunga, Solukhumbu, Khotang, Ramechhap, Mustang, Manang, Gorakha, Myagdi, Humla, Dolpa, Mugu, Jumla, Kalikot, Dailekh, Jajarkot, Rolpa, Rukum, Salyan, Bajhang, Bajura, Achham and Darchula are the districts which receive transport subsidy in fertilizer (See Attached map with shaded by light blue color). Out of them, 13 are mountain and 13 are hill districts. Except three mountain districts of Central Development Region (CDR), all other mountain districts are receiving subsidy. All these are food deficit districts. Some of them are not yet connected with road and those which are connected with road do not have transportation network inside the district. As a result, transport cost of fertilizer is very high and beyond the affordability of farmers.

The aim of providing transport subsidy in these districts is to maintain the agricultural production at optimum level through the use of fertilizer and to protect the people from acute food shortages. Budget for transport subsidy is allocated to transport fertilizers from the nearest road head to the district headquarters so that the farmers could get fertilizer at same price of adjoining district. Number of districts receiving transport subsidy has changed over time but remain as such after 2000/01. The independent studies carried out in fertilizer sector after 2000/01 have suggested to reduce the number of districts for such subsidy but suggested to increase budget volume for remaining districts.

In the beginning, transport subsidy budget was allocated on the basis of districts' demand. District demand has been ignored while allocating budget in later years. In 2000/01, NRs 64352 thousand was allocated to subsidize the transport of chemical fertilizers and improved seed. Showing budgetary constraint, it was reduced to NRs 34470 thousand in 2001/02. The allocation was as par the allocation of 2001/02 in later years. Inadequate allocation in later years reduced the amount transported and created scarcity of fertilizers in the districts. In the scarce situation, farmers living away from district headquarters would not be able to get fertilizer according to their need.

3.5.4 Availability, distribution system and use of fertilizer

Main entry point of imported fertilizer in Nepal is Birgunj. Small proportion of the fertilizer is imported from Biratnagar. Some of the mixed fertilizers and Ammonium Phosphate Sulphate (APS) are imported from Bhairahawa and Nepalgunj. Import of fertilizer from any of the entry point of Far Western Development Region (FWDR) has not been recorded yet. These fertilizers are stored at godown established very nearby border entry points. The reason behind this is to receive the unload port certificate from an independent surveyor before sending the imported fertilizers to markets. Due to large volume entry form Birgunj, the availability of chemical fertilizers is concentrated in the Central Development Region (Table 4).

Table 4: Region wise stock of chemical fertilizers at the end of FY 2006/07

	Unit: ton					
Importers	EDR	CDR	WDR	MWDR	FWDR	Total
Public Sector (AICL)	821	3543	690	569	88	5711
Private Sector	782	16082	6310	226		23400
2KR 2004	1414			450		1864
Total	3017	19625	7000	1245	88	30975
Quantity Stocked (%)	9.74	63.36	22.60	4.02	0.28	100.00

Source: FU, MOAC

Table 4 shows that less than 37 per cent of the available fertilizer is distributed in four development regions other than the CDR. Remote districts that receives transport subsidy from the Government rely on the fertilizers available at formal sources in *terai*. The availability of small amount in these regions also reduces the chances for remote districts to get fertilizers with transport subsidy. Moreover, of the total 37 per cent available most of this is used in the *terai*, leaving little for the hills and mountain areas and hence further obstacle to achieve increased food production and poverty reduction.

NFP 2002 has included all solid and liquid substances supplying plant nutrients under the definition of fertilizers. The definition covers organic, inorganic, microbial, multi and micro nutrient fertilizers. The distribution and use of all types of fertilizers is crucial to maintain the soil fertility and ultimately to enhance the crop productivity.

The private sector has established a distribution network in *terai* from Biratnagar to Nepalgunj but concentrated mainly in Birgunj. The AICL has offices and godowns from Jhapa to Kanchanpur and stocks up the fertilizer from east to west Nepal. DADO offices are responsible to manage the distribution of chemical fertilizers in these districts. Registered retailers, cooperatives, AICL depots and DADO appointed contractors are involved in the distribution of fertilizers. . Region wise distribution of fertilizers in the first eight months of FY 2006/07 from formal sources is presented in Table 5.

Table 5: Fertilizer distribution in first eight months of FY 2006/07

	Unit: MT					
Fertilizer	EDR	CDR	WDR	MWDR	FWDR	Total
Urea	2561	9845	4207	1732	138	18482
Di Ammonium Phosphate	1637	8158	1226	1243	299	12563
Muriate of Potash	1	1	2			5
Ammonium Sulphate		2545	181			2725
Ammonium Phosphate Sulphate	429	8204	5266	3014		16913
Nitro Phosphate		245				245
Single Super Phosphate		254		27		281
Mixed (20:20:0)	1787	272	199	96	40	2394
Mixed (20:20:10)	126		40	44		210
Total	6540	29524	11121	6156	476	53818
Distribution per cent	12.15	54.86	20.66	11.44	0.89	100.00
Area of holdings ('000' ha)	796	750	512	371	225	2654
Gross distribution (kg/ha)	8	39	22	17	2	20

Source: FU, MOAC: data on fertilizer

CBS (2004): area of holdings

Gross distribution of fertilizers was quite uneven in the first eight months of 2006/07. It was 39 kg/ha in the CDR and only 2 kg/ha in the FWDR.

The APP has targeted to increase nutrient application rate from 20 kg/ha in 1991/92 to 131 kg/ha in 2014/15. The formal records of the FU, MOAC shows that there is a large gap between the nutrient demand and consumption (see Table 6). If the official data on fertilizer consumption are true and the fertilizer availability is restricted to formal source only, there must be havoc in the country. Since, the situation is quite normal in case of fertilizer availability, it is obvious that farmers demand is met by informal supply. The independent studies carried out in fertilizers sector prove it. GON (2003) reported that the actual use of chemical fertilizer was 56 nutrient kg/ha in 2001/02. The application rate was 24.37 nutrient kg/ha, if we consider the formal record. ANZDEC (2002) stated that the use of chemical fertilizer was 58 nutrient kg/ha. NARMA (2006) estimated that the use of fertilizers by Nepalese farmers was 84 nutrient kg/ha. In contrary, formal records show that the use of chemical fertilizer was just 13.80 nutrient kg/ha in 2005/06. Per hectare application of fertilizer was further reduced in 2006/07. From these figures, we can conclude that less than one-sixth of the fertilizer use is met by formal import.

Table 6: Nutrient demand and consumption of fertilizers distributed through formal Sources, by year

FY	Estimated nutrient demand		Nutrient consumption	
	Total (000 ton)	kg/ha	Total (000 ton)	kg/ha
2002/03	122	41	89	29.99
2003/04	132	45	78	26.25
2004/05	151	51	61	19.65
2005/06	169	57	43	13.80
2006/07	196	66	42	13.50

Source: FU, MOAC

Supply and use of fertilizer from formal source is decreasing but fertilizer is not scarce in the market. This clearly indicates that the illegal import has been increasing. An appropriate way to reduce it is to get the required quantity of chemical fertilizers from India in subsidized rate and sell it in Nepal in the same price.

4 Review and Analysis

4.1 Major provisions of NFP

The NFP was approved on 28 February 2002 aiming to provide further confidence to private sector, remove various uncertainties observed in the fertilizer marketing. The policy also aimed to enhance farmers' confidence under liberalized fertilizer market to attain the overall goal of increasing agricultural productivity and reducing poverty. The policy has placed a greater responsibility on the market for the supply of fertilizers including setting of sale prices. Although the NFP reiterates government's earlier policies and programs on fertilizer deregulation, it is much more than this. Main features of this policy is summarised as below:

4.1.1 Broad based definition of fertilizer

The establishment of FU at MOAC, the establishment of quality control mechanism from the centre to the grassroots level, privatization of AIC, follow a transparent mechanism to manage the fertilizers received in grant assistance. Much efforts have been made in fertilizer sector in the process of deregulating fertilizer trade. However, all these works were concentrated on the management of chemical fertilizers. It is the NFP that broadened the definition of fertilizer to cover organic, chemical and microbial fertilizers.

4.1.2 Involvement of private sector in fertilizer trade

The fertilizer policy has assured the involvement of private sector in fertilizer trade by treating the public, private and cooperative sectors equally. Fertilizer can be imported and distributed by any one in the country, but needs to comply the conditions set by the FCO, 1999.

4.1.3 Decontrol on fertilizer prices

With the removal of price subsidies, the earlier uniform pricing policy for fertilizers has become completely obsolete. The policy has shifted the responsibility to the market in setting sale prices of fertilizers competitively, both at wholesale and retail level. However, in case of districts which receive transport subsidy, price is fixed by the committee represented mostly from the Government authorities. In such districts, the price is fixed at road head (neighbouring district).

4.1.4 Support to fertilizer dealers

Any firm, company or person who wants to undertake fertilizer business needs to obtain a "Certificate of Registration" from the respective DADO in the district. Selling fertilizers without getting registration certificate will be an offence of the Essential Commodities Control (Right) Act, 1961.

Since fertilizer dealers remain direct contact with the farmers, they are in the best position to guide farmers on the types and grades of fertilizers to be used. The purpose of registration is to allow the DADO to have updated and accurate list of fertilizer dealers in the district. This help to provide training and other supports to enhance their knowledge on fertilizers. This will also help to supply quality fertilizers to the farmers.

4.1.5 Support to targeted areas and targeted groups

In view to support targeted areas (remote and mountain districts) and targeted groups (small and marginal farmers) who can't afford to buy costly fertilizers, the NFP underlines the need

for supporting them through special agriculture production program. The NFP reiterates following to support the targeted areas and targeted groups:

- Provide fertilizers at concessionary rates in the districts of hill and mountain regions whose district headquarters are not yet linked with a permanent motorable road. The concessionary rates will be equivalent to the cost of transporting fertilizer to these districts.
- Make all types of solid fertilizers containing Nitrogen, Phosphorus and Potassium eligible for the fertilizer transport cost concessions.
- Provide opportunities to the cooperative and private sector to take part in the distribution of fertilizers provided under concessionary rates.
- Consider the possibility of providing fertilizer on concessionary rates to small and marginal farmers.

4.1.6 Provision of buffer stocks

In order to deal with uncertainty in fertilizer supply (seasonal and location specific) and shortages of fertilizers, the NFP requires the government to hold a buffer stock of fertilizers to guard against interruptions in transport access. The NFP suggests the following to manage the buffer stock.

- Hold about 20 percent of the estimated annual fertilizer consumption as buffer stock.
- Make storage, management and distribution of buffer stock transparent and competitive.
- Manage grant-aid fertilizer made available to the Government as a buffer stock and mobilize accordingly.

4.1.7 Domestic production of fertilizers

The possibility of domestic production of fertilizers seems low in Nepal as the country does not possess raw materials for it. Relatively small size of demand of fertilizers in Nepal would further a high cost producer. Therefore, the policy suggests the following with regard to the domestic production of fertilizers:

- Encourage establishment of a fertilizer plant in joint venture so as to attract foreign investment required to establish plant and to export the excess quantity to the country of investing partners.
- Give equal facilities and opportunities to the producers of mixed or blended fertilizers for importing fertilizers as raw materials, as available to other fertilizer importers.

4.1.8 Promotion of Integrated Plant Nutrients Management System

Emphasizing IPNS, the NFP promotes judicious and efficient use of chemical fertilizers together with sufficient compost or farmyard manure. The basic concept of IPNS is the maintenance or adjustment of soil fertility and plant nutrient supply to an optimum level for sustaining the desired crop productivity through optimisation of benefits from all possible sources of plant nutrients in an integrated manner.

4.2 Interagency coordination mechanism

Increasing agricultural productivity itself is a complex issue and needs the involvement of several stakeholders. Since overall goal of the NFP is to increase agricultural productivity, appropriate coordination among different stakeholders is required during policy formulation and its implementation. Fertilizer is one of the four major inputs identified in the APP, Nepal.

It has great linkages with other policies like irrigation and energy. Since energy policy greatly affects on the use of groundwater (subsidized electricity rate), which is a major source of irrigation in lowland- largely affects on the fertilizer use efficiency then to crop productivity.

4.2.1 Interagency coordination during policy formulation

Political leaders representing in the Finance Committee of the Council of Ministers, Hon'ble Member of the National Planning Commission, and the higher level bureaucrats of MOAC, NPC and MOF were major stakeholders involved in the formulation of NFP. Since limited consultations were made with the farmers, fertilizer dealers and importers, which was also only after setting the goal and objectives, their say could not be addressed properly in the policy. Nevertheless, the policy formulation process was moved ahead smoothly. The policy was prepared and finally approved in 16 months duration from the date of direction of the Finance Committee. Within this duration, a heavy exercise was required while converting the draft of Chemical Fertilizer Policy into National Fertilizer Policy. The Working Committee and the Steering Committee did not face any obstacle while stepping ahead. Taking all these matters into consideration, one can conclude that there was good coordination among the agencies which were involved in formulating the fertilizer policy.

4.2.2 Interagency coordination mechanism during policy implementation

To attain the goals and objectives set in the NFP 2002, following strategies are suggested:

- a. Ensuring the availability of fertilizers.
- b. Making fertilizer distribution system transparent, competitive and effective.
- c. Maintaining the supply of quality fertilizers.
- d. Management of Integrated Plant Nutrients System.

Adoption of these strategies in full swing is essential for the effective implementation of the policy. Each strategy requires the involvement of more than one agency. The coordination mechanism that the policy envisaged for each strategy can be explained as follows:

a. Ensuring the availability of fertilizers: To ensure the availability of fertilizers, interventions are required to supply the required amount of fertilizers either through import or domestic production or buffer stock. The FU of MOAC is responsible to forecast the demand of fertilizers. It is stated in the policy that the estimated demand will be made public six months ahead of the major crop growing season.

The policy makes the registration of importers at MOAC mandatory. Government supports will be made available to all registered importers, whether they are public, private or cooperatives, by keeping them in equal footing. The FU collects the world market prices and make them available to the importers. Similarly, the importers should make the wholesale price and the quality of fertilizers public, which is monitored by the FU, DADOs and FIs. Local administration also monitors, if it suspects any sort of cheating to the consumers. The domestic producers of mixed fertilizers will get equal facilities to import raw materials as the other fertilizer importers. In addition, the policy encourages the business houses of Nepal to establish a fertilizer plant within the country or to invest in neighbouring countries so that it could be an assured source of fertilizer for Nepal. The policy has also made a provision of buffer stock. About 20 per cent of annual fertilizer consumption will be kept in this stock that includes the fertilizers received in grant assistance. Fertilizers kept in this stock will be made available in the markets directly if scarcity is felt. Otherwise, the fertilizers kept in this stock will be released before the main crop growing season through competitive bidding.

b. Making fertilizer distribution system transparent competitive and effective: To make the distribution system effective, region wise demand and supply of fertilizers is updated and made public at regular intervals. All importers are encouraged to establish distribution

networks to cover a large part of the country. Regular interaction programs have been organized by the Government at different levels to facilitate the fertilizer distribution. Policy makers, researchers, soil scientists, administrators, importers, distributors and farmers are the participants of such interactions. These programs are to share the views of different actors and the programs also provide suggestions to make the distribution system more effective.

The policy states that the Government will not intervene in fixing the prices of fertilizers. The price will be fixed according to the market rule. The government will not provide price subsidies. However, it may provide fertilizers on concessionary rates in targeted areas and to the targeted group of people.

c. Maintaining the supply of quality fertilizers: There should be a very good coordination among different stakeholders to maintain the supply of quality fertilizers in the markets. Commitments have been made in the policy to formulate the Act and regulations, and to enforce them timely; establish and strengthen the capacity of laboratories to test and analyze the fertilizer samples; encourage the dealers and consumers to procure fertilizers from authorized sources.

The need of Fertilizer Management Act is felt by all stakeholders to overcome the legal problems that arise time and again. Coordination between the MOAC and the MOLJ is required to formulate the Act and amend the existing regulations. The parliament should also give priority to pass the bill. Farmers, dealers and local administrators should co-operate the FI and DADO to ensure the supply of quality fertilizers. If these stakeholders do not co-operate each other in coordinated way, then the supply of quality fertilizers will merely be a slogan.

d. Management of Integrated Plant Nutrients System: The introduction of IPNS in cropping system is the most important strategy taken by the NFP 2002 for sustainable agriculture production. The importance of organic bio and micro nutrient fertilizers was not taken into consideration before the formulation of NFP 2002. This strategy will be adopted to prevent the degradation of soil fertility, minimize the possible negative impact of chemical fertilizer to the environment and to promote the balanced application of different types of fertilizers.

It is necessary to make farmers aware on IPNS by conducting training at various levels. In the policy, coordination among the farmers, researchers, agricultural extension workers, non-governmental organizations, cooperatives and traders is proposed to promote IPNS. Similarly, coordination among farmers, trainers, extension workers and soil scientists is required to educate the farmers.

The coordination mechanism that has been proposed in the NFP can be categorized into two levels: local level and central level. Farmers, fertilizer dealers, FIs, DADOs, local administrators, distributors are the main actors at local level, and the FU, MoLJ, importers, producers, custom offices, laboratories, soil scientists, researchers, trainers and surveyors are the main actors at central level. The organization of interaction programs, training, meetings, visits, communications etc. will bring all these actors close to each other at all levels. The nearness developed by such activities will motivate them to act in a coordinated way.

4.3 Monitoring and evaluation system

The NFP being a sub-sector policy of agriculture sector, it is the responsibility of MOAC and the institutions under it to monitor and evaluate the implementation of NFP 2002. Monitoring tracks the actual performance or situation against what was planned or expected according to pre-determined standards. Therefore, the ministry has established a separate unit to gauge the performance of activities undertaken and facilitate to perform those activities as

per the requirement. Periodic evaluation of fertilizer related issues are also carried out from the FU.

Although the monitoring and evaluation is not separately dealt in the policy document, monitoring the performance of activities have been clearly spell out. Monitoring of the supply situation of fertilizers, world market price, domestic price, buffer stock management, fertilizer quality have been suggested in the policy. It is also stated in the policy to carry out fertilizer use study (this is basically an evaluation) in regular intervals to facilitate and make fertilizer system efficient and to promote IPNS for the balanced use of chemical fertilizers. In recent years, several IPNS technologies developed by Sustainable Soil Management Project (SSMP) have been incorporated in the annual programs of DADOs. The FCO 1999 and the Fertilizer Guidelines 2000, which are in line with the NFP, specify the monitoring mechanism for supply, distribution, quality and price of fertilizers.

Fertilizer Inspectors has legal rights to monitor the quality of fertilizers. S/he also monitors the supply, distribution, price and the legality of traded fertilizers in the markets. If requires, s/he can take help of local administration to perform his/her duty. S/he can also prosecute cases against the wrongdoers. The chief of FU has the legal right to register the fertilizers. S/he involves in monitoring of several activities mentioned in the policy. In addition, local administrator, DADO, NARC, Soil Scientists, ministry are involved in monitoring the demand, supply, price and quality of fertilizers, and provision of rules and regulations related to fertilizer.

4.4 Strengths and weaknesses

The major strength of NFP is the seriousness of the Government to approve and implement it before several other sectoral (National Agriculture Policy) and sub-sectoral policies. The major weakness is that the Government remains completely silent on the matters that were suggested to be improved for the effective implementation of the policy. There are some other strengths and weaknesses of this policy.

4.4.1 Strengths

- It is the sub-sector policy that accorded top priority of the Government as well as the parliament. As a result, it was formulated prior to the formulation of National Agriculture Policy.
- The policy emphasizes to increase the availability of all types of fertilizers thereby to attain the national goal of poverty reduction through enhanced agricultural productivity.
- The policy tried to accommodate other policy measures taken by the Government before its formulation and opened the door to improve those measures as well as to promulgate the Fertilizer Act.
- It emphasizes balanced application of fertilizers and promotes IPNS.
- It covers organic, inorganic, bio, multi and micro nutrient fertilizers under the definition of fertilizer.
- It accepts the deregulation of fertilizer trade and decontrol of price.
- It strengthens the involvement of private sector in fertilizer trade.
- It keeps fertilizer under the category of essential commodity.
- It ensures the supply of fertilizer through the management of buffer stocks and providing transport subsidies in remote places.
- It promotes fertilizer producers and encourages investing for fertilizer plant.

4.4.2 Weaknesses

- The policy was formulated in top-down approach. The process of formulating the policy was begun from the direction of the Finance Committee of the Council of Ministers. Due to this reason, it is apparent that inadequate consultations were made

with relevant stakeholders. It creates a situation of misunderstanding between the Government and the private sector. As a result, both of these parties are not fully committed to fulfill the commitments made in the policy. For example, the private sector does not have distribution network in remote areas from where the public sector removes the AIC offices. Nobody is there to utilize the infrastructure developed for the storage and distribution of chemical fertilizers. Hence, the farmers residing in remote areas are unable to get fertilizers according to their requirements.

- Although it covers other fertilizers under its definition, it is basically concentrated only on chemical fertilizers.
- Policy document is a broad guideline. To bring the policy into action, plans, programs and projects are developed. However, in NFP very minor matters like the provision of fertilizers in concessionary rates for targeted areas and targeted people through Special Agriculture Production Program is mentioned. The statement becomes already obsolete since the transport subsidy is provided through other headings in remote districts.
- Fertilizer policy is implemented but the act could not be produced and the FCO and the Fertilizer Guidelines have not been amended. Due to this reason, several provisions of policy like the registration of importers at MOAC, making international and domestic prices of fertilizers public etc. have not been fully implemented. This is due to lack of coordination among the agencies which should have been involved in bringing the provisions into actions.
- Method to manage buffer stock has not been devised yet. If the Government could not receive fertilizer in grant assistance, it could not manage the buffer stock.
- Weak arrangement for quality control and silent on illegal import. These matters harassed the real importers.
- Government could not keep private sector and AICL in equal footing. As AICL is more formal institution and using government facilities such as office buildings, godowns, threshing floor etc. Similarly, there is disparity in producing bank guarantee to import fertilizers. Private sector still needs to produce bank guarantee which is not required for AICL. Also, the AICL has been treated as the Government representative while receiving subsidized fertilizers from India.
- Coordination among different stakeholders is very weak. This is evident from the fact that the illegal import from India exceeds formal import. Custom Offices and Revenue Investigation Offices several times seize the fertilizers imported illegally. These fertilizers are auctioned without consulting the DADOs. This is providing opportunity to mix the fertilizers purchased illegally and legally and sell them in the market. Another burning example is the filing of cases. No cases have been filed at court yet although the finding of illegal cases is common.

4.5 Gaps and inconsistencies

Gaps and inconsistencies have been observed in the formulation of NFP 2002 and its implementation.

- In this policy, importer is defined as any individual or organization importing chemical fertilizer into Nepal from any foreign country but the fertilizer is defined as any organic, chemical and microbial substance applied to soils for supplying essential plant nutrients. This is the inconsistency in definition. Why should we restrict the importer only to chemical fertilizers? This is in fact not obeyed by the importers and they are importing microbial and organic fertilizers in addition to the chemical fertilizers.
- It is stated in the policy that all importers importing fertilizers from international market will be registered at the MOAC. This statement has not been legalized and no importer is registered at the MOAC till date.

- The policy states that importers importing fertilizers as raw material for the production of mixed fertilizers will be given equal facilities as available to other importers of fertilizers. Since this statement has not been legalized yet, fertilizer producers have to bear several difficulties while bringing fertilizers as raw material.
- The policy defines fertilizer as any organic, chemical and microbial substances applied to soils for supplying essential plant nutrients. According to this definition, the rules and regulations related to fertilizer sector should cover organic, bio, multi and micro-nutrient fertilizers. However, it is not done till date. The FCO has been amended several times after its formulation but attention has not been paid to bring other fertilizers under legal binding.
- One of the objectives of the NFP 2002 is to promote IPNS for efficient and balanced use of fertilizers. Several technologies have been developed to increase the quality and quantity of organic fertilizers but they are not incorporated in Government extension programs. However, attempts have been made to promote organic farming.

4.6 Outcomes and effects of fertilizer policy

- The policy strengthens the role of private sector in fertilizer import and distribution. As per the spirit of this policy, the share of private sector has been tremendously increased in fertilizer sales and distribution. According to the record of FU, MOAC, the share of private sector in fertilizer import rose from 20 per cent in 1997/98 to 93 per cent in 2005/06.
- The overall use of fertilizer has been increased in the past years. It was 25 nutrient kg per ha in 1996/97 (before deregulation) that reached 58 nutrient kg per ha in 2000/01 (ANZDEC, 2002). NARMA (2006) reported that the use of fertilizer reached 84 nutrient kg per ha in 2006. Out of this quantity, merely 16 per cent (13.8 kg/ha) was contributed from official imports.
- Private sector has extended the distribution network in terai and mid-hills as the share of AICL is gradually decreasing in fertilizer import and distribution. It is also reported that the private sector also reach in some of the districts which receive transport subsidy from the Government. They are selling fertilizers in market prices in those districts.
- A draft of Fertilizer Management Act has been prepared as per the recommendation of the policy.
- Knowledge level of farmers has been increased to test the quality of major chemical fertilizers traded in the market. Farmers are also imparted trainings on testing the quality of fertilizers by adopting easy techniques.
- The Government has included some of the recently developed sustainable soil management technologies in extension programs. It promotes the use of organic fertilizers and balanced application of chemical fertilizers.
- The use of multi and micro-nutrient fertilizers has been increased. The use of these fertilizers will help to replenish the micro-nutrient elements in the soil.
- Fertilizer use studies have been carried out in periodic intervals (Nepal Fertilizer Use Study, 2003; Assessment of Supply, Distribution and Use of Fertilizer in the Mountainous and High Hill Districts, 2004; Impact of Fertilizer Deregulation Policy, 2006).
- Technical capabilities for testing and analyzing the fertilizer samples have been strengthened. Facilities of soil testing laboratories under the DOA have been increased and technicians have been trained.
- In overall, fertilizers use has been increased which can be considered as a positive indicator of fertilizer deregulation.

5 Recommendations

Strong interagency coordination from local to central level is required for the successful implementation of NFP 2002. On the basis of review and analysis carried out in this study, appropriate modalities/options for better interagency coordination and rearrangement in delineating the roles and responsibilities to the organizations involved in the implementation of NFP 2002 have been recommended.

5.1 Appropriate modalities/options for interagency coordination

The implementation part of NFP 2002 is not encouraging. Although GON (2002) committed to implement it effectively, policy implementation could not be reflected appropriately in the Government programs. Promulgation of Fertilizer Act and necessary amendments in existing rules and regulations as per the spirit of the policy could not be done. The major reasons behind this are the top-down approach of policy formulation, inadequate consultations with relevant stakeholders and weak coordination among the stakeholders. Following modalities can be suggested to improve the coordination among the agencies.

5.1.1 Development of plans and programs

Policy implementation begins by incorporating its provisions in plans and programs. A commitment was made in the tenth plan to implement it effectively. The institutions under the MOAC were also instructed to incorporate the provisions of the policy in their annual programs. Since the programs of these institutions which should have to be changed after the implementation of NFP are as such, it can be said that the programs have not been changed. Therefore, appropriate plans and programs have to be developed for strengthening the monitoring of price, quality and availability of fertilizers; providing fertilizers at concessionary rates to the targeted area and people; devising an appropriate measure to manage the buffer stock; investing for the establishment of a fertilizer plant; enhancing the capacity of fertilizer dealers/retailers to educate farmers; and the promotion of organic fertilizers and IPNS. The development of plans and programs brings relevant stakeholders closer. It will create a favorable environment to coordinate each other for successful implementation of the plans and programs.

5.1.2 Ensure the involvement of different agencies in quality control mechanisms

The NFP 2002 has accommodated most of the policy actions taken before and the existing rules and regulations. There are some anomalies in the participation of other agencies in quality control mechanisms which should be corrected as early as possible. Custom Offices, Revenue Investigation Offices and the local administration seize fertilizers that are imported illegally. They do not invite FI or DADO while selling such fertilizers through auction. It creates difficulty for FI and DADO in monitoring the sale of such fertilizers. In the contrary, if such fertilizers are found below the set standard and are needed to be disposed, the participation of these agencies is not required in committees that take decision on fertilizer disposal. To develop the coordination among different agencies, their equal participation in quality control mechanism should be ensured.

5.1.3 Make the legislative component wide

The need of Fertilizer Act is felt by everybody related to this sector. A draft of Fertilizer Act was prepared in 2002 but could not be approved. It needs to be amended to make it wide and approved from the parliament as early as possible. According to the existing rules and regulations, actions like taking samples of complaint fertilizers, sealing go-downs, testing and analyzing these samples, prosecuting against the wrongdoers requires the involvement only of FI and the institutions under the MOAC. Custom Offices also have the facility for

testing and analyzing fertilizer samples and also have the capacity to take legal action but it is not accepted by the rules. These factors do not allow strong coordination among the agencies. To make the coordination strong and to make all stakeholders equally responsible for fertilizer quality control, the provisions in the act and other rules need to be widened.

5.1.4 Negotiate with India to get fertilizer in subsidized price

There is a high price difference in fertilizers between India and Nepal. A large quantity of fertilizers is coming from India through informal sources to fulfil the demand of Nepalese farmers. Nepal is continuously requesting India to provide fertilizer in subsidized rate and India is providing small portion of Nepal's requirement in this rate which is not sufficient to control the informal import. The role of private sector has been ignored in the distribution of such fertilizers. It is also a risk for the private sector to sustain their business. It makes the coordination between public and private sector very weak.

The most practical way to keep private sector in the fertilizer business is to negotiate with India to import required quantities of fertilisers in subsidized rate. To involve all parties concerned in the import of negotiated fertilizers until India completely deregulates its fertilizer trade or that international prices decline to the levels that allow importing parties to sell their imports at prices 15-20 per cent higher than the prices of India. It will also make the job of quality control easy. Above all, Nepal has to understand the fertilizer policy of India while preparing Nepal's fertilizer policy. Even if Nepal prepares unilateral fertilizer policy it would not be in the favor of poor Nepalese farmers. As they have to pay more amount than Indian farmers in getting same quantity of fertilizer.

5.2 Expand the role of Department of Agriculture

The institutional arrangement set for the implementation of this policy shows that the MOAC and the institutions under it have major roles and responsibilities to be performed for implementing it. The FU at the central level and the FIs at local levels are the major stakeholders under the MOAC responsible for NFP implementation. In the policy, the roles and responsibilities of DOA is not clear which is the main organization to formulate agricultural plans and programs. Its roles should be strengthened so that the effective programs of fertilizer sector could be developed and implemented. Since the DOA is also a coordinating agency at department level, it can get support from other stakeholders at that level. At present, the roles to be performed at central level are centralized at FU. Therefore, some of the roles and responsibilities assigned to FU could be shared with the Soil Management Directorate (SMD) of DOA so that the work load of FU would be reduced and the DOA would become more responsible. The DOA can mobilize the FIs more effectively than FU which will ultimately strengthen the quality control mechanism.

5.3 Make semi-judicial authorities more responsible and accountable

The roles and responsibilities of Custom Offices, Revenue Investigation Offices, CDO and Police need to be widened while formulating the act and amending the rules and regulations. The present design of the policy as well as the rules and regulations needs all cases to be submitted to the MOAC (or the organizations under it) by these organizations which is not practical. Since these authorities have been conferred semi-judicial power by the state, they can perform leading role to maintain the legality in fertilizer trade. The farmers, traders and other actors are also habituated in this practice. Therefore, widening the roles and responsibilities of these agencies is the best way of developing interagency coordination among the stakeholders. Similarly, the modalities suggested above should be adopted to promote the better interagency coordination.

6 Conclusion

The National Fertilizer Policy, 2002 is formulated to increase the productivity of crops so as to help in poverty reduction. Formulation of policy at central level without in-depth prior consultation with other stakeholders at grass-root makes policy implementation difficult.

The modalities suggested for better interagency coordination in implementing the fertilizer policy are the outcomes of the analysis of procedures followed in NFP formulation as well as the study of major issues in fertilizer sector, strengths and weaknesses of the policy, existing coordination mechanism in the policy, and the gaps and inconsistencies. Since formulation and implementation of NFP can be a practical example of agriculture sector for developing appropriate tools and approaches to promote better interagency coordination to design and implement SARD-M interventions. The modalities suggested in this study are also the representatives of other agricultural and rural development policy interventions.

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