India’s National Agricultural Policy, described as the first of its kind was approved by the Union Cabinet on July 25th 2000. It has been described as the first of its kind, since independence. The policy has proposed significant structural and institutional reforms in the country’s farm sector; to be implemented through the following major thrust areas.

1. Sustainable Agriculture
2. Food and nutritional security
3. Generation and Transfer of technology
4. Input Management
5. Incentives for agriculture
6. Institutional Structure

Of these, the generation and Transfer of technology, forms a major thrust area and the reforms in agricultural extension will be implemented through a unique policy framework called the National Agricultural Extension policy (NAEP). The following paper examines the major priority areas of the policy, the challenges of the Research, Extension and Clientele system; in the wake of the policy commitments and the transition to the new role. A number of suggestions have also been enumerated to streamline and strengthen the policy.

As per the Internet and other documents available, the GOI has published its draft policy for Agricultural Extension, while State Governments are still not clear. Extension paradigms have been changing globally over a period of time. It has metamorphosis from “diffusion of innovations” in the 1960’s to constraint identification of 70’s to improved management in the 1980’s. The much acclaimed Training and visit system revealed its impressive gains in resource rich/well endowed areas, and its failure in making an impact in rain fed areas. (Farrington et al 1998)

This paradigm shift calls for the increasing role of extension as an enabler, though its role as a doer should continue, in a qualitatively different way. The change from “technology transfer to collaborative learning” paradigm (Will Allen, 2000) to meet the challenges in the area of natural resource management is easily said than done.
To remain relevant and useful in the years to come, the public extension system has to strengthen its understanding on technology, markets, prices, demand and policies (Rasheed and Van den Ban, 2000). This necessitates a sound agricultural extension policy, which is innovative, farmer-friendly and capable of nurturing a plurality of institutions.

In this context, the NAEP of the Tenth plan period, seeks to address the challenges of the changing economic scenario in India and the need for appropriate agricultural technologies to respond to poverty alleviation, food and nutritional security, diversified market demands and export opportunities. The national agricultural extension policy should be consistent with and supportive of national agricultural development policy and goals (Swanson, 1990).

The following paper attempts to study the broad areas/ issues and clauses in the National agricultural extension policy and suggests ways and means of reinforcing/strengthening the policy with respect to the following broad issues in the policy; which are dealt in detail one by one.
1. Policy reforms
2. Institutional restructuring
3. Management reforms
4. Strengthening Research – Extension linkage
5. Capacity building and skill upgradation
6. Empowerment of farmers
7. Mainstreaming of women in Agriculture
8. Use of Media and Information Technology
9. Financial sustainability
10. Changing role of Government

I. POLICY REFORMS
The reforms emphasize on a multi-agency extension service comprising of public extension, private extension and Mass media and information technology.

The public extension system in the country suffers from the following lacunae
a) Public extension services are widely viewed as supply driven, rather than demand driven.
b) Commercialization of agriculture has given rise to specialized client and demand for location specific extension services, not catered by public extension.
c) Insufficient face-to-face contact between extension worker and farmer.
d) Inadequate funds for operational purpose.
e) Majority of the extension services are curative in nature.
f) Incomplete and inefficient extension services rendered.

In the light of the above discussions, the number and types of organizations providing extension services in India has shown an increase over the last two decades. The Department of Agriculture (DOA) continues to dominate the extension scene in terms of manpower and geographical coverage, though it is not often the primary source of farm information for majority of the farmers (Sulaiman et al 2002).

Farmer’s dependence on other farmers and input dealers as source of agricultural information continues to be high reflecting the limited reach of DOA in its area of operation. The main function performed by the DOA is the delivery of technical messages to individual farmers in his circle/area. These are not regular due to his preoccupation with the implementation of a number of schemes having input/subsidy delivery. The DOA has been facing a number of constraints (financial, human resources...
and institutional) and without a total restructuring, its ability to provide services demanded by farmers is under serious doubt. Though several experiments to improve the performance of public sector extension were undertaken since 90's its impact has been negligible mainly due to lack of a shared understanding on the role of extension in the country's context and lack of operational flexibility in achieving the goals.

The performance of the private extension agents (farmers organizations, producers co-operatives) vary widely and their presence is more skewed towards well endowed regions. Even in those regions where there is some significant presence, there has not been any integration of efforts by the various agencies. A good number of farmers are willing to pay for quality extension services especially in the area of plant protection and training programs. One important condition for paid services is the farmer's insistence on field visit based advice. The demand for paid services was more in non-food grain crops, especially horticultural crops (fruits, vegetables, flowers and spices) and oil seeds. Thus considerable scope exists for initiating paid extension services in agriculture. With greater emphasis given by India for diversifying its agriculture to horticulture crops and also due to the increasing realization of knowledge as a most important input for efficient farming, the institutional diversity in provision of extension services would increase in the coming years. In the light of the above facts, the following suggestions emerge.

Though it is said that a clear cut demarcation should be made between public and private extension, based on the socio-economic criteria, and specificity of extension services required; it is practically not possible, at least for the present, to have a water tight compartmentalization of the two.

This shows that both public and private sector extension should co-exist and function simultaneously. Public extension can play a dominant role in dissemination of knowledge-based technologies, that are central to farmers' concerns and that will maintain the natural resource base. These are subject matters areas that are not likely to be taken up by the private sector e.g. include dissemination of production management technologies that are specific to different crops and livestock systems; natural resource management technologies, such as soil and water management, and integrated pest management. The small and marginal farmers, which are not a focus of attention for private extension, have to depend largely on Public Extension Services. This calls for a reorientation of the Government's policies to encourage both public and private extension.

The potentiality of private extension in terms of information technology, and creation of market tie up should be explored. However, with the Government's attitude of downsizing the public sector, it is expected in the long run, public extension will be shrunk and private extension will be encouraged. When private extension services multiply in size and number, cost effective extension service will be provided, due to market competition.

The third approach would call for suitable Government policies, in streamlining the work of NGO's (who are expected to be service oriented) and harnessing their potential.

In the phase of globalization and liberalization policies, marginal farmers and small farmers in the context of availing private extension services will get their

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INTEGRATED AND CO-ORDINATED APPROACHES BY DIFFERENT CHANGE AGENCIES AND MEDIA

Public Extension
- Linkage with NGOs
- Service Organizations
- Focus on Knowledge based Technologies
- Benefited by small and Marginal farmer by free Service to resource poor Categories (70%)
- Strengthen Intelligence
- To go for diversified Value added, consumer Preferred items for domestic as well as foreign markets through exports
- More Production → To → Value addition and Consumer preferred item

Private Extension
- Co-exist with Commercial firms & consultancies
- Globalization Commercialization Value addition & Trade Liberalization
- For benefiting From Private Extension
- SF & MF
- Strengths Market Intelligence
- Market Intelligence
- Strengthen Market Intelligence
- To go for diversified Value added, consumer Preferred items for domestic as well as foreign markets through exports
- More Production → To → Value addition and Consumer preferred item

Commercialization
- * Provides Specific Extension Service
- * to be used more for non-food grain crops & commercial enterprises (30%) sharing/paid/cost corporate system

NGOs
- Service Organizations
- Focus on Knowledge based Technologies
- Benefited by small and Marginal farmer by free Service to resource poor Categories (70%)
- Strengthen Intelligence
- To go for diversified Value added, consumer Preferred items for domestic as well as foreign markets through exports
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dividends, only if they can meet the demands of a diversified market, of value addition, and of producing these products at a competitive pricing at the same time, maintaining the quality standards. Another gray area, which demands more of in depth study, is consumer preference. Consumer preference for agriculture and allied products has to be identified through direct contact, interviews and questionnaire methods. This calls for strengthening of market extension research.

Agriculture extension policies should be oriented towards strengthening of market extension for small and marginal farmers. It is also suggested that lack of funds for public extension can be overcome by collection of taxes for providing extension services, on the lines of irrigation taxes.

II. INSTITUTIONAL RESTRUCTURING

Under the NAEP, the Institutional restructuring aims at decentralizing the management of the public agricultural technology system by the establishment of (ATMA), Agricultural technology management agency, which is a registered society for technology dissemination at the district level. By ensuring farmers representation in the governing board of ATMA, as well as the management committee of ATMA, farmers play a pivotal role in preparation of block action plans, in setting up of block extension priorities and recommended resource allocation across program areas.

It is strongly emphasized that, farmer’s role in ATMA should not only be restricted preparation and implementation of Strategic Research and Extension plan (SREP) and block plans, and setting up of research and extension priorities for district and block, but their role should be enhanced up to the level of providing a suitable market for the farmers produce. In this context, concept of “seed village”, and popularization of green manure and organic manure should be strengthened. With respect to the creation of Agri Export Zones in the respective states as per the new agricultural policy, efforts should be made to set up specialized agencies like Export inspection agencies (EIA) to uphold quality parameters of the
Sathyamangalam flower market, wherein marketing, price structure is entirely controlled by farmers and a direct transaction exists between farmers and buyers.

VII. MAINSTREAMING OF WOMEN IN AGRICULTURE
Recognizing the substantial though invisible contribution of women in Agriculture, the NAEP seeks to recognize farm women as agricultural extension clientele. More training to men and women extension workers will be made - on the role of women in agriculture. Taking into consideration, the traditional and cultural milieu of our country, which lay barriers, which restrict women’s accessibility to extension services, more number of female extension workers will be deputed to provide greater accessibility of extension services to women beneficiaries.

VIII. USE OF MEDIA AND INFORMATION TECHNOLOGY
Rather than production, marketing of agricultural produce is a major challenge faced by the Indian farmer. Hence all efforts to make use of e-commerce, World Wide Web, market intelligence, should concentrate on providing more of market information to farmers. The use of information shops on the lines recommended by M.S. Swaminathan should be established throughout the country, rather than existing in few isolated pockets.

IX. FINANCIAL SUSTAINABILITY AND RESOURCE MOBILIZATION.
In order to make extension services, more cost effective, private investment in technology transfer will be encouraged in areas where a competitive market exists like AI services, soil testing and fertilizer advice. Public funded services will be effectively utilized for higher - value export crops or to develop new inputs or machines. Banks can mobilize money for public causes, for provision of cold storage and transport facilities to farmers.

X. ROLE OF GOVERNMENT
In the phase of the emerging multi extension service, gaining prominence and extension being a state subject, the role of the Government will be to balance the functioning of Public, Private Extension, NGOs, the mass media and information technology services.

Government policies should aim at setting up of Zonal agricultural marketing Research centers, which provide information on the market intelligence, and also on the geographic crop potentiality of each region, and such centers can be linked with Agri Export Zones.

ISSUES THAT NEEDING RECONSIDERATION
In the context of trade liberalization and globalization, creation of potentially demarcated areas for specific commodities in the form of Agri export zones is a welcome initiative, accruing from the new policy. However, the performance of these zones can be strengthened only if specific agencies / committees on the lines of Export inspection agencies (EIA) are attached to these zones; so that there is no compromise on the quality parameters. The setting up of agro processing facilities in each of these zones; further enhances the performance of the zones.

As pointed out earlier, the public and private extension systems will continue to co-exist, with the private extension providing services, mainly in the area of non food grain crops like spices, plantation crops, floriculture and medicinal plants. The public extension can focus its attention on
produce, and such agencies should be made responsible for any serious lapses encountered if any, in the functioning of these zones.

Besides, scientists of the respective zones should find a place in the marketing committee; and also in monitoring of training programs for both extension personnel and farmers e.g. agro processing.

It is high time that, the Government thought of reorienting technologies especially in farm mechanization. Farm mechanization should suit farmer's situation and conditions e.g. Farm mechanization can be advocated in areas where labor scarcity exists and use of cost effective technologies like use of augurs for taking banana pits which costs only Rs.1 per pit. The Agro services have to be improved and made available to a group of farmers on a cost-sharing basis.

III. Management Reforms
Under the new policy agenda, Para extension professionals will supplement the public extension in a cost-effective manner. For e.g. the Para extension workers at grass root level will be supported through public through payment of honorarium, routed through farmers groups to which they are attached. Once the Para worker is able to demonstrate his/her usefulness to the client group, the honorarium paid to him through public funds will be phased out and replaced by the clients paying for the services of the Para extension worker. This will promote more of accountability on the part of the extension workers.

IV. Strengthening Research - Extension linkages
The direct face-to-face interaction between scientists and farmers is the most ideal and provides the effective Research - Extension linkage. It has been successful in the state of Punjab, though geographically small in area, its feasibility in larger states remains to be tested.

V. Capacity building of Extension functionaries
India, has to her credit, a vast network of about 0.1 million extension functionaries in agriculture, animal husbandry, agricultural engineering to meet the needs of nearly 250 million economically active population in agriculture. Over 90 per cent of the extension workers are at the field level. Under the new extension policy, skill upgradation of all extension functionaries would be done through HRD policy, which envisages a systematic skill gap analysis, on the basis of which long-term training plans will be devised.

State level training institutions would have institutional links with MANAGE (National Institute of Agricultural Extension Management).

It is suggested that

A complete refresher-training course to be administered to extension personnel every 3-5 years.

Three performance appraisal assessments should be conducted

Provision of monetary benefits (intrinsic) and extrinsic, like job elevation, promotion should be necessarily given to effectively motivate the staff.

Short trainings may be imparted to all the change agents on rotational basis based on the practical needs.

VI. EMPOWERMENT OF FARMERS
Farmers should be fully empowered from production till marketing. A transparent system should be present, wherein facilities like inputs, credit facilities linked to domestic markets and distance markets should exist. An e.g. of a case of successful farmer empowerment is seen in
resource poor farmers, and small and marginal farmers. Small and marginal farmers can benefit their maximum by investing in private extension, provided they go for diversified value added and consumer preferred items; targeting on domestic and foreign markets.

Establishment of market information centers / information shops / kiosks at village level, which provides for an easy, accessible information support system for farmers and traders in agriculture, needs to be done; through emphatic government interventions and policies.

**CONCLUSION**

Though agriculture is a state subject, still the GOI can play an advisory role so as to encourage different State Governments to follow its guidelines. Taking advantage of the emerging pluralistic extension system, the public sector extension in India should restructure itself to meet the emerging demands of farmers. Public extension will play a dominant role in dissemination of knowledge-based technology and private extension can be utilized to deliver specific extension services in view of commercialization and diversification of agriculture. Small and marginal farmers, who take up private extension service, should be encouraged to produce diversified products based on market demand and consumer preference, if they have to gain substantially for the cost of private extension service incurred. In course of time, the burden on Public Extension should gradually be decreased and encourage private extension to come up.

Farmers involvement in determining research and extension priorities and formulation of block and district plans through the decentralized system of ATMA, should also assign a prime role for farmers in deciding the market for their produce.

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