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PART-IIA

GOVERNMENT OF MEGHALAYA

NOTIFICATIONS

The 20th December, 2017.

No.VET(SCH) 186/2016/90. - The Governor of Meghalaya is pleased to notify the Pig Breeding Policy herein called the **Meghalaya Pig Breeding Policy 2017**, to promote breeding and development of Pigs in the State as under. This policy will be subjected to revision after 5 years or earlier as deemed necessary by the department.

MEGHALAYA PIG BREEDING POLICY 2017

Pig Breeding Policy for the State of Meghalaya has been formulated with the mission and target to improve the genetic potentiality of the pig germ-plasm for increased productivity of local indigenous/nondescript pigs/pig breed through scientific breeding strategies and using improved exotic breeds and advanced technology. However, this has to be supported by appropriate production system ensuring optimum and economic feeding and management of the animals, adequate animal health care and disease control, assured organized market for animal products, adequate post-harvest processing and value addition of the products and sustainability of pig farming.

1.1.1: Objectives of the Pig Breeding Policy:

Pig Breeding policy and strategies for the State have been recommended with the following objectives:

- (A) Genetic improvement of the nondescript and indigenous pig breed of Meghalaya for productivity enhancement by crossbreeding with exotic breed to a desired level of combination of exotic and local inheritance.
- (B) Improvement and Conservation of Indigenous *Niang Megha* pig breed and crossbred *Lumsniang* of the state through selective breeding.
- (C) Establish and maintain pure germ-plasm pool of exotic breeds suitable for the state to meet the requirement.
- (D) Maintenance of well-planned crossbred animals at farmers' field.

(E) Expansion of infrastructure and support mechanism to propagate the elite germ-plasm through Artificial Insemination (AI).

(F) Ensure that the breeds introduced and crossbreds produced and propagated are adapted to local environmental conditions and emerging climatic challenge.

(G) Strengthen support mechanism and development of the sector in respect of feeding, housing and health care besides value addition and marketing of the produce with value chain development.

The breeding policy for pigs in Meghalaya has been recommended and designed for implementation based on the production system prevalent and suitable in different zones/locations and also based on the demand of the area, interest of the farmers and pig rearers, type of pigs available for production, availability of feed resources, climate and other environmental conditions, markets etc.

1.2: POLICY RECOMMENDATIONS:

The recommended policies are as follows to fulfill the objectives as laid down for the state of Meghalaya:

1.2.1: Genetic improvement of the nondescript and indigenous pig breed (Niang Megha) of Meghalaya for productivity enhancement by crossbreeding with exotic breed to a desired level of combination of exotic and local inheritance.

For the purpose of improving genetic potentiality of the local indigenous breed of pigs of Meghalaya, crossbreeding of these pigs will be done with exotic breed. Boars of pure exotic breed will be utilized for breeding of the gilts and sows of local indigenous breed of pigs.

Choice of exotic breeds:

The choice of a particular breed for a locality/zone will depend on farmers' preference, consumers' demand and suitability of the breed depending on their adaptability and resources available. The exotic breeds of choice for the state are Hampshire, and Duroc for adoption of purebreeding/crossbreeding. These breeds will be used in different zones and locations of the state as per preference and demand of the farmers besides the production performance of the crossbreds and their adaptability.

Foundation stock for pig breeding in field/breeding farms of the State:

Genetic improvement of the indigenous pig population of Meghalaya will be attempted by introduction of superior exotic/improved pig breeds using Artificial Insemination/Natural mating. Selective breeding within the populations of indigenous/crossbred pig and culling of poor meat producers owned by large number of farmers will be attempted to achieve sizeable gains both in genetic and economic terms. Good quality half-bred boars with exotic inheritance level of 50 percent will be mated *inter se* with selected gilts/sows for their further improvement in productivity.

Selective breeding of good quality indigenous Niang Megha pigs will be done to conserve the breed and gradually improve its productivity besides their crossbreeding.

Development of Exotic and Indigenous breeds' nucleus herds:

Nucleus herds for the exotic breeds viz, *Hampshire* and *Duroc*, Indigenous *Niang Megha* and crossbreds *Lumsniang* will be established in the Government Pig Breeding farms and also with the private participating entrepreneurs to carry out pig development programme in the state.

The nucleus herd in the govt. farm will consist of 50 to 150 sow units/dam line depending upon the carrying capacity of the existing farm or newly established farm. Foundation stock will be procured from pedigreed herd of organized farms or reliable sources from different locations of the state and the country. The technical committee to be constituted for implementation of the breeding programme will fix the procurement criteria, number and age and body weight of animals to be procured, criteria of selection of the stock etc. Mating plans avoiding inbreeding will be designed by the farm management to breed the best animals to ensure optimum

number of farrowing and to produce sizeable number of piglets in each farrowing as per breed norms. Standard procedure will be followed for weaning of piglets. Selected sows will be bred and maintained up to 3rd or 4th farrowing depending upon performance. The replacement stock for both male and female will be selected on the basis of litter traits of dams, weaning weight, body weight gain and number of functional teats. Data recording on various growth, reproductive and productive traits will be made using standard formats. After keeping the required number of selected piglets, gilts and boars, the rest of the animals will be provided to the multiplier farms and field units. Sire replacement will be a regular feature from new sources or on rotational basis to eliminate inbreeding effects.

For efficient use of the exotic breeds in crossbreeding programme, import of the new improved germplasm to the state is highly desirable and recommended to increase the genetic variability.

Exotic inheritance level in crossbreds:

The level of exotic inheritance in crossbreds of exotic breed and indigenous pigs will be ranging from 50 percent to 87.5 percent depending upon the production system followed in a particular location/zone and availability of inputs required for the purpose. The exotic inheritance level in the crossbreds may vary according to the farmers' choice, adaptability in a zone/area and suitability in a particular production system followed and resources available for scientific management and resistance to diseases. Based on these situations suitable recommendations have been made while framing the breeding policy. In the Government Pig Breeding farms pure exotic pig breeds will also be bred as per need for maintaining pure lines besides the crossbreds generated using the exotic and indigenous breed of Meghalaya, namely *Niang Megha* and, crossbred *Lumsniang* pigs besides some other germ plasm form other state but suitable for Meghalaya.

Breeding Policy under Extensive Production system of pig rearing:

1. Under this system in remote areas/villages where mostly the indigenous local pigs are reared in open ranging conditions without any scientific inputs in the form of feed or improved management thereby depending only on naturally available resources. Upgrading of indigenous local pigs by use of exotic boar of suitable breeds viz., Hampshire and/or Duroc in rural areas may be done keeping the interest of poor farmers in mind. The use of exotic breed in different locations/zones will depend on the adaptability of that breed, choice of farmers and consumers demand, feed resources and other input availability.
2. In the areas where crossbred pigs are maintained by the small holders in households/farms having pig shelters constructed with indigenous materials or penning system and provides very little feed from household and agricultural wastes the breeding policy recommended for cross breeding of these pigs with the boars of suitable pure exotic breed or improved Crossbreds. *Inter se* mating of the selected crossbreds may be followed for fixation of desired genes for higher productivity and adaptability.

Breeding Policy under Semi intensive Production system of pig rearing:

Rural and semi urban pig farms maintained by the farmers with small to medium herd size under semi intensive production system having good housing or shelters as required giving some amount of compounded feed and maintain or capable to raise good crossbred animals, the breeding policy recommended to practice cross breeding of local female stock with boars of Hampshire or Duroc up to 75 percent or more of exotic inheritance. The breed for a particular location will be selected according to the suitability and adaptability of the breed and market demand.

Breeding Policy under Intensive Production system of pig rearing:

Urban, peri-urban, and well accessible rural pig farms maintained under intensive rearing with provision of modern housing system, good quality feeding and management and capable of rearing reasonably medium to large herd of crossbreds and exotic animals under the system, breeding policy recommended are as follows:

- (i) For commercial farming of improved exotic purebred/crossbred pigs of proven potential, elite populations of breeds like Hampshire and/or Duroc may be maintained as per market demand for providing quality germ plasm.
- (ii) Commercial farming of improved exotic purebred pigs with proven potential of black coat colour *i.e.*, Hampshire and their crosses with *NiangMegha* or indigenous may be encouraged.
- (iii) Crossbreeding of Indigenous pig breed *NiangMegha* may be carried out using Hampshire/Duroc boars in different areas as per available demand of consumer/market, (a) The level of inheritance may be fixed at 50 percent for both the exotic and indigenous pigs. *Interse* mating of the half bred may be done for fixation of the genes with 50 percent exotic level of inheritance.(b) In elite herds of organized farms under intensive production system, the inheritance level of exotic breed can be raised to 75 percent or more for higher growth rate and body weight gain to attain maximum weight at market age.
- (iv) Lines of selected exotic breeds and crossbreds may be maintained in the government Pig Breeding farms with the required mating plans for production of breeding stocks to be supplied to the multiplier pig farms for production of piglets for distribution in field for fattening purpose and marketing.

1.2.2: Improvement and Conservation of Indigenous pig breed *Niang Megha* through selective breeding.

Policy for improvement and conservation of *Niang Megha* breed of pigs:

1. In order to conserve and improve *Niang Megha* indigenous pig breed, a Government pig breeding farm will be established as Nucleus herd for the breed where selective breeding will be practiced to produce improved piglets for supply of quality genotypes to the field.
2. The *Niang Megha* pig breeding farm will be initially started as a 30 sow unit which will be expanded gradually by adding required infrastructure facilities. Best quality boars and gilts/sows of *Niang Megha* will be procured from the breeding tracts of the state to start the farm. Animals from different tracts will be procured in order to avoid inbreeding.
3. In the native breeding tracts and localities where the *Niang Megha* pigs are available these animals will also be bred pure for their conservation and improvement *in situ* through selective breeding.
4. In rural and remote areas where crossbred pigs as well as improved variety of *Niang Megha* are maintained by the small farmers under extensive or semi-intensive production system having very little facilities in regard to shelters and provision of feed inputs breeding policy recommended to be followed by the farmers is to go for cross breeding of these pigs with the boars of specified exotic breeds/selected crossbreds.
5. In selected breeding tracts of *Niang Megha* these pigs will also be bred pure for their conservation and improvement through selective breeding.

1.2.3: Establish and maintain pure germ plasm pool of exotic breeds suitable for the State.

In order to carry on and implement the policies creation of a gene pool of different breeds of exotic pigs and crossbreds and its continuous improvement is of utmost importance so that these animals could be utilized in various breeding programmes under different production systems. Purebred lines of the proven exotic breeds of pigs will be bred and produced in organized farms of the Department. Hence it is recommended that new Pig breeding farms may be established preferably in each zone/districts for production and supply of breeding boars, gilts/sows as per demand of the state. The locations of these farms will be decided by the state department of AH and Veterinary.

Each farm will have two mandates,(1) Each farm will be started with about 20 sow units of selected exotic breed(s) for pure breeding to raise the required number of breeding animals, and (2) to produce required

numbers of suitable crossbreds of exotic and indigenous pigs following selection and inter-se mating of suitable crossbreds in the State.

1.2.4: Maintenance of well-planned crossbred animals at farmers' field.

Crossbreds produced by using boars of exotic breed mated with Indigenous pigs as mentioned above with desired level of inheritance may be maintained and bred by *inter-se* mating for fixation of the genes at farmers' field. Selection of breeding boars may be made by evaluating their performance in respect of litter size and body weight at birth and weaning, age at first farrowing, body weight and measurements and weight gain of the initial crops of the progeny.

In order to generate the required number of pigs for slaughter to meet the demand of pork in the state, a three pronged development strategy is advocated as mentioned below-

- (a) Each district of the State should set up at least one "**Seed Stock Farm**" to provide superior germplasm to the Multiplier Pig Farms / Self Help Groups / Farmers' Societies.
- (b) Each subdivision should have at least two "**Multiplier Farms**". However, thickly populated districts where piggery is popular should have at least three such farms.
- (c) In addition, each subdivision of the districts should form at least 100 Self Help Group/Farmers' Societies/Clubs who will take up this pig-rearing venture.
- (d) Interested and trained pig farmers in field will be provided with good quality improved crossbred piglets/gilts/sows/boars of desired breed combinations from the Pig breeding and nucleus farms for scientific rearing, breeding and production of piglets for maintenance by small holders for fattening and production of pork.

1.2.5: Expansion of infrastructure and support mechanism to propagate the elite germ plasm through Artificial Insemination (AI).

Artificial insemination (AI) technology will be introduced /strengthened in all the Government Pig breeding farms as well as in some village herds initially by adopting nearby villages from the Pig breeding farms and multiplier farms. Initiation will be made by using fresh semen for the purpose and gradually frozen semen will be used based on the facilities available and created. Besides collection of semen from superior boars of selected breed, efforts will also be made to import frozen semen from other countries to develop elite herds and improvement of local germ plasm.

The following pig breeding farms of the state are selected to start the activities by developing suitable Infrastructure and other facilities:

1. Pig Breeding Farm, Nongpiur, East Khasi Hills District.
2. Regional Pig Breeding Farm, Kyrdemkulai, Ri-Bhoi District.
3. Pig Breeding Farm, Khliehtyrshi, West Jaintia Hills District.
4. Pig Breeding Farm, Gindo, West Garo Hills District.

Pig semen laboratories will be established in these farms along with a state level central laboratory for procurement of frozen semen of outstanding quality from outside sources, processing and preservation of locally collected semen from good quality boars of different breeds at regular interval.

Man power development will be made to implement the AI programmes through training of required number of personnel.

1.3: BREEDING PLAN AT GOVERNMENT PIG BREEDING FARMS:

Policy recommended for Government pig breeding farms and strategies suggested for implementation of the breeding programme as per plan are as follows:

- (a) Purebred lines of the pigs of chosen exotic breeds may be bred /maintained and produced in organized Pig breeding farms of the State Department of Animal Husbandry and Veterinary.
- (b) Artificial insemination will be followed for breeding besides natural mating by developing suitable facilities and required trained manpower. Semen will be collected from selected boars on the basis of their performance and superiority in the farm for the purpose. Rotational use of boars will be made with other farms in order to avoid inbreeding and introduce genetic variability. Frozen semen technology will be introduced after its standardization. Purebred exotic boars/Frozen semen may be imported to introduce superior genetic merit of desired traits from other countries/sources.
- (c) Selection of breeding boars may be made by evaluating their performance in respect of litter size and body weight at birth and weaning, age at first farrowing, body weight and body measurements and weight gain of the initial crops of progeny. Selection Index will be designed by the farm for efficient selection of the animals of outstanding merits.
- (d) Elite crossbreds of superior genotypes with designated inheritance level of exotic breeds with local will be produced and raised with planned breeding for production of breeding boars, gilts and piglets for distribution to the multiplier farms and field.
- (e) Animals for breeding should be certified by the Department of AH & Veterinary for which necessary guidelines will be developed.

1.3.1: Selection of breeding/replacement stock:

The following guidelines will be followed for selection of breeding animals:

- (a) Selection of males is to be done in two stages:
 - (i) In the first stage two male piglets may be selected from each litter at weaning.
 - (ii) In the second stage two males against each sire line at the age of six months may be selected to make the total number to 20 males with a target to utilize ten boars of the ten sire-lines for breeding.
- (b) Selection of females to be done in two stages:
 - (i) In the first stage, 3 female piglets will be selected from each litter at weaning, (ii) In the second stage, 15 females will be selected against each sire line considering not more than two gilts per dam at the age of six months to make the total number to 150 females for breeding to ensure 100 farrowings.

1.3.2: Identification and traceability:

A systematic process of identification, registration and recording of animals will be done to keep track of the individual animals. On successful operationalization of the above, attempts will be made to implement a system to keep track of the value chain in respect of germ-plasm and food safety protocols.

1.4: BREEDING PLAN TO BE FOLLOWED IN THE STATE:

1. The breeding programmes will be followed as structured in the breeding pyramids through the Central Nucleus Breeding Scheme (CNBS) as depicted in Figure 1 and Figure 2.

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Figure 1: Breeding pyramid

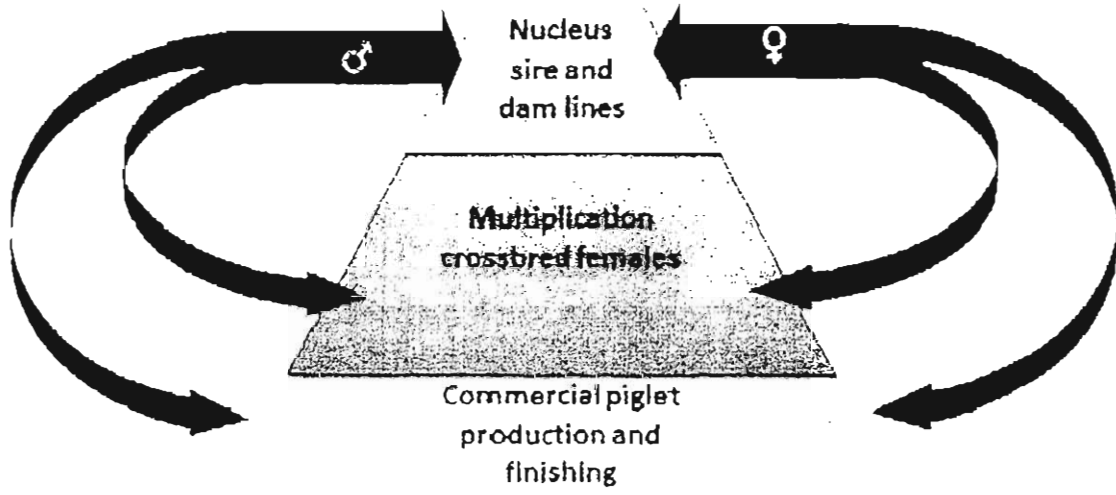


Figure 2: Breeding plan

Level of Farms	Type and Coverage	Activities
Nucleus Pig Breeding Farm	State level (Two/three farms)	Nucleus Farms will maintain Great Grand Parent (GGP) and Grand Parent (GP) stock and breed.
Multiplier/Satellite Pig Unit	District level (One/two in each): Govt, Progressive Farmers)	Multiplier Farms will maintain Grand Parent (GP) and Parent (P) stock and multiply the stock.
Farmers' Field Units	Farmers field Units, Commercial farms, Monitoring by AH & Vety Dept. and Multiplier Units.	Regular monitoring and organized/cooperative based marketing may be ensured for better economic return.

2. Open Nucleus Breeding Scheme (ONBS) will be followed for Indigenous *Niang Megha* breed and elite crossbred pigs.

This system envisages formation of a nucleus population of breedable animals of exceptionally high genetic merit. Nucleus herds of exotic/indigenous pigs can be established in the stations/farms located in or around district/zonal headquarters where infrastructure, manpower and other facilities are readily available or can be developed with minimum effort. The outstanding breedable males are to be let out from the nucleus herd to the farmers or breeders in the neighbouring areas to bring about genetic improvement of their animals.

This system will be useful under the conditions in the state of Meghalaya where field data recording and Artificial Insemination is being introduced gradually along with necessary infrastructure facilities.

1.5: Plan of work for ONBS:

1. Screening of the unrecorded base population for identifying some outstanding females.
2. Collection of superior females to form a nucleus herd which would be used as test group of animals.
3. Production of semen from good quality boars and A.I. of the gilt/sows in participating herds in field and production of progeny.
4. The best males are to be selected on the basis of their own performance as well as on dams' and siblings' performances. They are then to be extensively used in the field.
5. ONBS can be tried for genetic improvement of crossbred population for which some nucleus herds of about 200 animals are to be established in different zones of the State considering the magnitude of the crossbred population. The outstanding animals collected from the field after their screening will form these nucleus herds. In the Nucleus herds, besides other, facilities for proper recording systems must be there so that the best boars can be selected on the basis of available records of their dam, sibling and own records. Simultaneously, a system should also be there for recording of at least these females' progenies, which would be collected and used as replacement stock in the field. To start with, if facilities are developed, ONBS can be initiated in pig breeding tracts in and around Department headquarters.

1.6: Technical Plans for pig breeding in field units:

1. Boar/semen of selected pure exotic/crossbreds pigs from nucleus herds/Government Pig breeding farms will be provided to farmers in the rural areas for breeding their Indigenous/nondescript pigs.
2. Boar/semen of pure/straight bred pigs from nucleus herd of Hampshire and Duroc will be provided to commercial/progressive farmers for breeding their animals and to multiplier farms to produce 50 percent Hampshire or Duroc and indigenous crossbreds. For the purpose.
3. Boar/semen of 50 percent exotic Hampshire/Duroc etc. inheritance produced in multiplier farms will be supplied to farmers to breed their local animals or for rearing for commercial purpose towards increasing the number of good quality piglet production.
4. Some of the existing Government farms in districts will be converted into multiplier farms. Private entrepreneurs will also be encouraged to start multiplier farms for producing crossbreds as mentioned above.

1.7: Establishment of Multiplier farms:

The state Govt. will establish Multiplier farms in different districts and also encourage and support private farmers/entrepreneurs to establish Multiplier farms through bank linkage to produce crossbred pigs with 5 percent or more exotic inheritance as recommended. Multiplier farms will be established in each district with 20 to 30 sow families of selected/preferred crossbreds. The Multiplier farms may follow *inter-se* mating of the half breeds and may also breed for increased exotic inheritance level depending upon the feasibility to produce good quality piglets for distribution to field farmers for fattening. The multiplier farms will select the boars an

gilts/sows for breeding on the basis of the performance records of their pedigree/family. The farms may follow rotational mating of boars and exchange the boars from other farms to avoid inbreeding. Sows completing 3rd or 4th farrowing may be disposed of and new selected gilts/sows may be brought in for breeding.

The multiplier farms will act as a source of piglets for the rural farmers for fattening purpose as well as the slaughter house by disposing the excess and culled animals.

Selected surplus males may be provided to the field units, boar rearers to replace their poor quality stock and to avoid inbreeding effect in the herds.

Castration may be done for non-selected males for breeding to prevent them from breeding and to improve their meat quality. Un-productive and infertile sows may be culled from time to time from the herd.

1.8: Ensuring adaptability of the introduced breeds and crossbreds propagated to local environmental conditions and emerging climatic challenge.

The exotic pig breeds introduced in the state from time to time namely Hampshire, and Duroc are found to be adapted for crossbreeding of local indigenous breed and nondescript pigs. These breeds/crossbreds while breeding for propagation of the future generations, efforts will be made to the following for making them adaptable to the emerging climate change without losing their productivity and resistance to environmental changes and diseases.

Information on meteorological data like atmospheric temperature, humidity and rainfall will be regularly maintained and analyzed from time to time on the changes on seasonal/yearly basis to correlate it with the performance of the animals in regard to their growth, reproduction and production traits and disease pattern. Accordingly measures on breeding management and housing will be taken up from time to time so that productivity of the animals is not affected adversely. Efforts will also be made to monitor and regulate the reproductive traits of the animals by ameliorating the stress factors due to probable climate change. Pig shelter and housing parameters will be designed for optimum comfort along with improvement in management systems to minimize climate stress.

1.9: Strengthening support mechanism and development of various sectors for implementation of the Policy:

1.9.1: Infrastructure: Establishment of Nucleus herds:

- Nucleus Pig breeding herds are to be developed for successful implementation of the various recommendations of the breeding policy in regard to the maintenance and production of suitable and required number of brooding stock of high genetic merit of the exotic, crossbreds and **Niang Megha**. The Nucleus herds are to be located in appropriate places to cater into the need of all the districts and the state. Additional number of Nucleus herds may also be developed in private sector. These herds may maintain the recommended and chosen exotic breeds and crossbreds.
- Considering the popularity and performance at farmers' field exotic breeds viz., Landrace and Duroc are recommended may be imported as per government norms for development of nucleus herds.
- The nucleus herd of Indigenous **Niang Megha** pig has to be established in the proposed Government pig breeding farm in a location in the native breeding tract of the breed.
- The Nucleus farms should have all the facilities in regard to housing, feeding and management such as sheds for farrowing, piglets, grower, replacement and parent stocks as required for each breed, Feed store, water supply provisions, water treatment plant wherever necessary and distribution system to individual pen, Sewage treatment plant and pits, boar sheds separately for each breed, Semen collection sheds, Artificial insemination sheds with all amenities, semen processing laboratory etc. Establishment of

satellite semen centers with facilities of semen storage in the area of operation will be necessary to expand the AI activities in field units.

- Feed mill with a production capacity of about 10-15 quintals production or more per day having a storage capacity of 500 quintals also may be established for production of quality compounded feed at reasonable cost. All the free land of the Pig breeding farms and Nucleus herds will be utilized for production of feed crops, Tapioca etc.

1.9.2: Feeds, Fodder and Nutrition:

- Introduction of feed processing technology and fodder cultivation (particularly Tapioca) to be made for improving the animal feed and fodder scenario in the state.
- Optimum nutritional plans and low cost feed formula with locally available feed ingredient to be formulated and used. Improvement of nutritional status of the animals in respect of micro- nutrient availability to be made.
- The locally available pig feed ingredients of the state such as rice polish, maize etc. may be made available through increased production to the local feed manufacturers/mills and pig farmers. The feed ingredients which are procured from outside the state, the price may be fixed at a reasonable rate by the Government. Production of quality feed at Govt. level will initiate a healthy competition among the private enterprises to sell their feed at a reasonable rate to the benefit of pig farmers.

1.9.3: Processing and production technology:

- Modern Slaughter house(s) will be established for adoption of scientific and humane method of slaughter, carcass quality assessment, certification, packaging and marketing of meat and meat products. This can be done PPP mode or in collaboration with private company or entrepreneurs.
- Surplus and perishable meat products may be processed and marketed with value-addition.
- Marketing channel and network be organized for distribution of marketed animals and pork Co-operative system, SHGs may initiated/strengthened and expanded along with Livestock Corporation in the state.

2.1: IMPORTANT SUPPORT SYSTEMS FOR PIG BREEDING POLICY

2.1.1: Animal Health, Disease Control and Bio-security measures:

- Disease surveillance and monitoring for incidence of diseases in animals may be strengthened. Regular reporting may be made for control of important diseases for sustainable production.
- Periodical health care and vaccination camps may be organized in the field/livestock rearing areas.
- Interstate check post may be strengthened to provide strict vigilance with facilities for screening of the animals before certification for movement.
- Some of the important facilities to be created in order to prevent disease incidence and to tighten the bio-security measures are: Setting up of check gate and quarantine stations at the point of entry to Meghalaya. Regular vaccination against prevailing and other emerging diseases in pigs (Classical Swine Fever, FMD etc.), Standard operating protocol to prevent spread of diseases and infection, and Postmortem facilities and incinerator.

2.1.2: Manpower requirements:

Support in terms of human resource will be required to implement the policies and programmes and manage the livestock breeding and development scenario in the state. Required number of officers and staff in each farm has to be placed for various categories such as Farm Manager, Animal Breeder and reproduction specialists, Assistant Farm Manager, all having the required qualifications and training in related

fields Livestock Supervisor, Veterinary Field Assistants for Farm, Laboratory, fodder field, feed mill, health care etc. will have to be also provided besides the required number of Farm, Animal and laboratory attendants, office staff etc.

2.1.3: Training and capacity building:

In order to properly implement and execute the breeding policy, suitable human resources are to be placed in various positions and regular training has to be imparted in the state or outside for the followings:

- Training of trainers and officers on Breeding management, Farm management, Traceability, Food safety, Value addition and value chain in pig industry, Artificial Insemination(AI) technology, Semen processing and preservation, Health and disease management, Training for Para-vets on Training boards for semen collection, Disease management, Farm management, Feed processing etc.
- Training and refresher's courses periodically for the Field Veterinary Officers as well as the Para veterinarians, entrepreneurs and farmers.
- Training for community level workers on awareness creation and community mobilization, Awareness and training for farmers on care and management of pigs, marketing, food quality and safety including zoonosis.
- Training of farmers, unemployed youths, women, SHG members on management practices and technology providing suitable package of practice on breeding, feeding, management, marketing etc. to be provided.
- A package of practice on management and control of diseases for different categories of animals may be evolved and suggested for field application.

2.1.4: Marketing/disposal of animals:

- Development of organized marketing network may be made for disposal of the farm produce by the farmers.
- Incentive price may be fixed by the Government for the animal products in the State so that the farmers get remunerative price for economic farming and earn their livelihood.
- Proper guidance in the marketing procedures is felt essential and hence Government may initiate a Livestock and Poultry corporation to deal with all these matters.

2.1.5: Follow up action by a group of experts in an effective way:

- Effective follow up action will be taken up by the Department to monitor the progress of implementation of policies and achievements made. A Technical Committee may be constituted for the said purpose by the Government.

2.1.6: Extension Network:

- The success of any project like genetic improvement of livestock and poultry in a state would largely depend on proper execution of the programmes and peoples participation besides farmers' acceptance. The extension network of the state A.H. & Veterinary Department has to play a vital role in this regard. The Information wing of the department must organize programmes from time to time to disseminate the information and technical knowhow to the people.
- Awareness programmes should be undertaken at regular interval with the aid of Information and Communication Technology (ICT), audio-visual display, film shows, distribution of pamphlets, radio talk, display boards, shows, fairs etc.

- Awareness about mixed/integrated and organic farming may be made amongst the farming community through various extension networks.
- A package of practice on management and control of diseases for different categories of animals may be evolved and suggested for field application.

2.1.7: Animal production/performance data and Health information system:

- Data collection and performance recording system may be developed and meticulously followed in the farms and field. Farmers may be made aware of the importance of data recording and trained from time to time along with other training programmes.
- The Department may adopt a policy to collect information in regards to different aspects of animal production, animal health, developmental activities etc. through MIS technology. Under this Animal Production and Health Information System, a computer based networking system may be established enabling faster flow of information. The network is to cover all the districts of the state.
- The Department of A.H. & Veterinary may also launch and update its own website to provide access to vital information and activities pertaining to the department and the programmes. The computer network facilities and the website will help the farmers, breeders, planners, veterinarians and others providing easy information access for successful implementation of the policies.

2.1.8: Livestock Insurance:

- The department should initiate a comprehensive livestock insurance scheme in collaboration with appropriate agencies to extend the benefit of insurance cover of the valuable animals reared by the farmers. The animals purchased by the farmers under Bank loan/DRDA scheme are generally insured by the Insurance Companies. The Department of A.H. & Veterinary should streamline the entire issue of livestock insurance to protect farmers' interest.

2.1.9: Collaboration:

- In order to be successful in implementation of the breeding policies close collaboration of the Department of A. H. & Veterinary of Meghalaya with different other States of North Eastern Region; National Research Centres on Pig, ICAR, located in the NE Region; ICAR complex, Barapani; NBAGR, Karnal, Agricultural Universities located in the region, etc. would be made as and when required.

2.2: ADDITIONAL RECOMMENDATIONS TO IMPLEMENT THE POLICIES

The following additional recommendations are made for implementation of the Pig breeding policy.

- (1) Required fund for proper implementation of the policies and development of infrastructure may be allocated and provided as per the programmes.
- (2) The proposed breeding policy for the State of Meghalaya will be implemented by the A.H. & Veterinary Department. Any effort for Piggery development by individuals, public organizations and non-government organizations etc. must be in conformity and within the purview of the proposed policies. Thus, the policies will be mandatory for the state of Meghalaya.
- (3) In order to develop a pool of improved germ plasm of livestock/breeds as envisaged in the policy, provisions may be made for procurement/import of breeding stock/semen from national and international organizations/sources.
- (4) A technical committee may be constituted to monitor and evaluate the implementation of the policies. This committee will also act in the advisory capacity.
- (5) Each Breeding farm will have a Farm Advisory committee to see the progress of the farm and provide suggestions from time to time.

- (6) Artificial Insemination may be carried out by the veterinarians or trained technicians (Para veterinarian) under the supervision of the qualified veterinarians.
- (7) The A.H. & Veterinary Dept. Meghalaya will carry out farmers' awareness programme on the policies and record keeping system. Necessary formats for keeping records in farms/stations and also in field by the farmers be developed and distributed.
- (8) Human resource development and management must get priority in the state so that the qualified and trained manpower can be increased and utilized effectively to handle the policies successfully.
- (9) Training/refreshers course for field veterinary officers on different areas of breeding, reproduction, management, nutrition, health cover etc. may be conducted/organized for effective implementation of the policies.
- (10) An organized marketing system with the required facilities may be developed in collaboration with all concerned agencies and corporations.
- (11) Impetus may be given to the small scale as well as large scale industries to handle the animal products for value addition and marketing.
- (12) Improvement in extension network of the state utilizing modern ICT and mobile technology, Entrepreneurship development and farmers training must be carried out on priority to implement the policies and improve the production scenario in the State.

2.3: WORK/ACTION PLANS TO BE PREPARED BY THE DEPARTMENT

For implementation of the policies, detailed work/action plans with appropriate time frame may be prepared in accordance with the guidelines of the policies by the experts and State Departmental officials for the followings:

- (1) Establishment and revamping of Pig Breeding farms as per need of the policy. Identification and utilization of the existing breeding farms for the purpose.
- (2) Action plan for identifying the areas where a specific breeding plan and breed(s) to be introduced in different districts/zones/agro-climatic zones/production systems.
- (3) Detail plans for breeding and evaluation of breeding boars as well as females.
- (4) Work plan for semen production in different production centres and distribution.
- (5) Open Nucleus Breeding System (ONBS) plans in designated areas for pig.
- (6) Establishment of elite herd(s) of indigenous *Niang Megha* breed of pigs for their conservation.
- (7) Cultivation of Tapioca in a massive scale which is relished by pigs may be taken up.
- (8) Farmers training, training of unemployed youths and women, awareness camp for implementation of the policy, data recording system in field, etc.
- (9) Animal production and health information system, computerization, data bank and networking, website updating.
- (10) Scheme for Insurance, credit, etc.
- (11) Restriction/check in movement of animals from and to the State by crossing state and international boundaries.

CONCLUSION

The Meghalaya Pig breeding policy has been framed to augment productivity of pigs of the state for higher production of pork and other products and sustainable adoption of suitable breeding and production systems for economic upliftment of the farming community and boosting the piggery industry for attaining self-sufficiency in animal protein requirements of the people of the state. This policy will be mandatory for the state and once implemented will raise production and contribute towards sustainable pig husbandry practice of the farmers and provide income generation with assured livelihood to the farmers, youths and women of the state. Besides recommending strategies for pig genetic improvement, some important recommendations have also been made for development of work plans as per need for fruitful implementation of the policy. The implementation of the policy would improve the pig production system with better adaptability of the genetically improved animals under changing climatic condition and management needs. It is also expected that once implemented the breeding policy will gradually minimize the gap between production and demand of pig meat and other value added products in the State and ultimately lead the state towards self-sufficiency. The programmes developed as per the policy recommendations will be supported by appropriate production system ensuring optimum and economic feeding and management of the animals, adequate animal health care and disease control, assured organized market for animal products, adequate post-harvest processing and value addition of animal products for sustainability of livestock farming and economic upliftment of farming families as a whole. The policy once implemented will raise production and contribute towards sustainable pig husbandry practices, enhance rural livelihood, industrialize the piggery sectors thereby enhancing Gross Domestic Product (GDP) of the state of Meghalaya.

By order etc.,

Deputy Secretary to the Govt. of Meghalaya,
A.H. & Veterinary Department.