

Rajshahi University of Engineering & Technology



Department of Computer Science & Engineering (CSE)

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“Analysis of Management System of Bangladesh Livestock Research Institute”

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Chapter 1: Introduction

Bangladesh Livestock Research Institute (BLRI) is a state-run national research organization under the Ministry of Fisheries and Livestock conducts research on livestock development of the country. BLRI was established in 1984 according to the 28th Presidential Ordinance and started functioning in 1986. It is situated in Savar, Dhaka on a land area of 487 acres.

1.1 Vision

Development of livestock and poultry by research.

1.2 Mandates

- Identification of the problems affecting poultry and livestock production.
- Development of technologies to solve those problems.
- Development of existing breeds and inventing new breeds.
- Food and nutrition management.
- Development of technologies for animal health and disease control management.
- Socio-economic evaluation and first hand extension.
- Publication of research knowledge and findings.
- Food safety, diversification of inputs and products and their value addition.
- Counseling of farmers and entrepreneurs.

1.3 Organizational Structure

BLRI has total 8 (eight) research divisions, 1 (one) support division and 5 (five) regional stations.

1.3.1 Research Divisions

Animal Production Research Division

This division currently running projects like - System modeling for food waste to feed production, Comparative feed intake and growth performances of buffalo and cattle of different ages, Study on nutrient utilization and biometrical ranking of

available roughages in Bangladesh, Study of livestock manure management and clean air production, Strategic development of beef cattle and their qualities etc.

Poultry Production Research Division

This division currently running projects like - Conservation and improvement of native chicken: Performance of fifth generation, Conservation and improvement of Quail: performance of fifth generation, Productive and Reproductive performance of selected native duck genotype (gen 2) etc.

Animal Health Research Division

This division currently running projects like - Development of Peste des Petits Ruminants (PPR) free zone in selected areas of Bangladesh to meet global control strategy, Development of polyclonal antibody based PPRV detection technique, Prevalence and multi-drug resistant pattern of emerging and re-emerging foodborne pathogens in livestock and poultry value chain, Immune escape and genetic evolution of highly pathogenic avian influenza virus H5N1 with the advent of vaccination in poultry in Bangladesh and many others.

Bio-technology Research Division

This division currently running projects like - Propagation, improvement and conservation of Munshiganj Cattle through planned breeding and their performance study ex-situ, Screening and development of different coat color variants' goat stock at BLRI, Production of calves through transfer of in vitro produced cattle embryos at farmers level and BLRI Research Farm.

Sheep & Goat Research Division

This division currently running projects like - Evaluation of performances of Boer and Jamunapari goat at BLRI, Improvement of Black Bengal Goat through community breeding, Conservation of farm animal genetic resources (FAnGR) at Naikhonchari Performances of Hilly Brown Bengal goat development at farm level, Community based sheep production in hilly area at Naikhonchari.

Socio-economic Research Division

This division currently running projects like - Value Chain Analysis of Milk and Comparative Advantage of Milk Production in Bangladesh, Economic Evaluation of Buffalo Production in Selected Regions of Bangladesh.

Systems Research Division

This division works with a view to identify field-based problems and prospects of livestock and poultry in Bangladesh. To conduct need-based research works and to solve the identified problems. This division carried out field trials of different technologies developed by various discipline of BLRI. In addition, arranged farmers filed day for demonstrating different types of technologies and to organized farmers training to transfer the matured technologies for the ultimate users are the key mandates.

Training, Planning and Technology Testing Research Division

Different technology-based farmers training courses; scientist training, seminar, workshop, internship and study visit program are arranged by this division. The main vision of planning is to support all kinds of administrative and logistic supports or works to accomplished proper planning of Bangladesh livestock Research Institute (BLRI). Other than scheduled ones BLRI receives request from ministries and other organizations to incorporate new issues under this divisional activity and also to maintain the national and international linkage of Research-Extension-NGO for collaborative research, transfer of technology and capacity building development program.

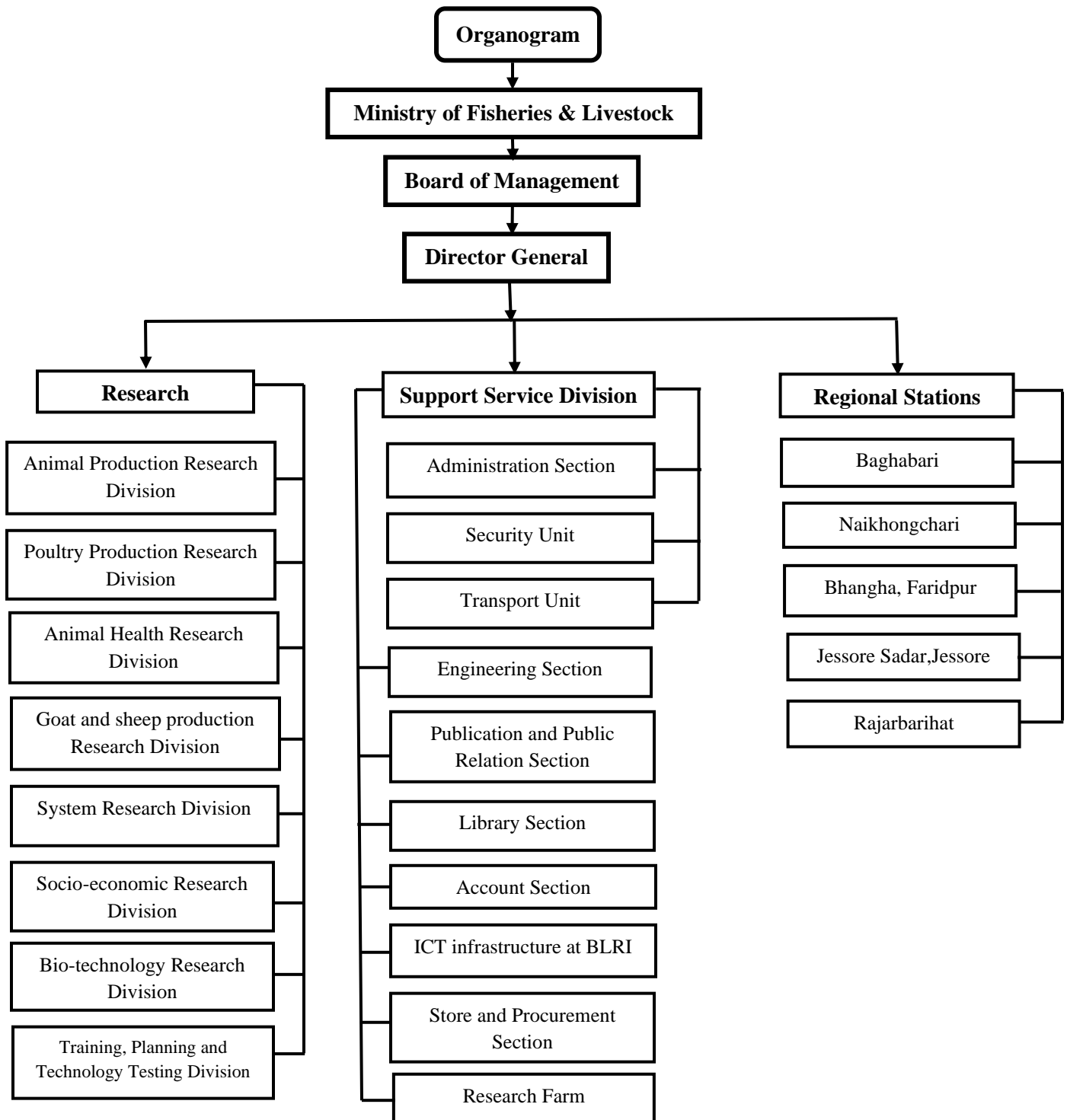
Support Service Division

This division consists of administration unit, security unit, transport unit, engineering section, publication and research section, library section, accounts section, ICT infrastructure at BLRI, store and procurement section and research farm.

1.3.2 Regional Stations

- Baghabari, Sirajganj
- Nikhongchari, Bandarban
- Godagari, Rajshahi
- Bhanga, Faridpur
- Jessore Sadar

1.4 Organogram



1.5 Board of Management

The institute is administrated by a Board of Management. The Board is the highest policy making body in the Institute's organizational structure and holds full responsibility to determine and execute policies and undertakings of the Institute within the framework of policy directives issued by the Ministry of Fisheries and Livestock of Bangladesh Government. The Director General, is the chief executive and works on behalf of the Board of Management. The Board consists of:

Chairman

Honorable Minister, Ministry of Fisheries and Livestock.

Co-Chairman

State Minister, Ministry of Fisheries and Livestock, ex-officio.

Vice-Chairman

Secretary, Ministry of Fisheries and Livestock, ex-officio.

Members

- Two members of Parliament to be nominated by the Honorable Speaker.
- Secretary, Ministry of Finance, ex-officio.
- Member (Agriculture), Planning Commission, ex-officio.
- Vice-Chancellor, Bangladesh Agricultural University, Mymensing, ex-officio.
- Executive Chairman, Bangladesh Agricultural Research Council, Mymensing, ex-officio.
- One-member higher rank than additional secretary, nominated by Department of Finance
- Director General, Department of Livestock Services, ex-officio.
- Two persons to be nominated by the Government from among persons engaged in research activities in the institute.
- Two persons to be nominated by the Government from among persons having interest in livestock and poultry.

Member Secretary

- Director General, Bangladesh Livestock Research Institute.

1.6 Workforce

There are in total 80 (eighty) scientists, 17 (seventeen) officers and 104 clerks in the institute. Recently 139 new is introduced to enhance the workflow of the institute and to increase the research area.

1.7 International linkage:

The institute has established linkages with a number of international organizations/institutes such as International Livestock Research Institute (ILRI), Chonbuk National University (CNU), Chinese Academy of Agricultural Sciences (CAAS) etc. for mutual cooperation in the fields of research and capacity building of human resources. The institute also maintains liaison with the other international donors and development partners like, FAO, UNDP, USAID etc. for their support in research and development activities.

1.8 National and International Reputation

- Bangladesh Livestock Research Institute (BLRI) provides importance on planning and execution of livestock research within the framework of the livestock & poultry policy of the Government.
- BLRI, so far, developed 75 technologies & packages and has been playing pioneering role in conservation of 24 different types of farm animals and poultry species, 43 different varieties of fodder crops of native and exotic origins.
- BLRI, responding to field demand of training on technologies, is training annually about 2000 farmers, entrepreneurs and training of trainers (TOT) and also jointly implementing MS and PhD research works of different universities and supporting university internship program.
- Bangladesh livestock Research Institute is implementing a project entitled "Improving Animal Genetic Resource value and Production program in Asia (AnGR)" financed by the Rural Development Administration (RDA), Govt. of South Korea in collaboration with the Asia Food and Agriculture

Cooperation Initiative (AFACI). AFACI awarded a county award among thirteen countries to Bangladesh as "Outstanding Country Award".

1.9 Conclusion

In this chapter, we have looked through the vision and mandates of BLRI (Bangladesh Livestock Research Institute). Also, we have made a general visualization on the organizational structure, research divisions, regional stations in different districts all around Bangladesh. Then we discussed about their Board of Management which basically administrates the institute. The board of management is the highest policy making body in the institute's organizational structure. We also discussed about their workforce, international linkage all around the world as well as their reputation on both national and international level.

Chapter 2: Problem Statements

2.1 Introduction

Bangladesh Livestock Research Institute has been serving the country's livestock resources for as long as 44 years now. It's one of the biggest research institute in this field. We investigated this institute's management system and found some problems as well as give some recommendations. We believe if the institute considers our recommendations and take necessary steps to eradicate these problems it will make them an even better institute that can serve our people.

2.2 Statement of Problems

The initial step of analyzing a candidate system is to find out the existing problems in that system. Here are our initial findings found in our initial investigation.

2.2.1 Problems Regarding Employee Needs

- Salary structure problem.
- Expectation of in situ promotion.
- Increment of age of retirement

2.2.2 Problems Regarding Work Load

- Have to share works out of one's duty.
- Work force is not sufficient to run administration.
- Travel allowance policy is not good enough.

2.2.3. Problems Regarding Regional Stations

- Regional stations are not self-sufficient.
- Don't have proper finance.
- Lack of senior officers.

2.3 Feasibility Study

1. Statement of the Problem: BLRI provides salary according to the national pay scale. But employees demand to have a separate salary structure for researchers.

Summary of Findings: Researchers are not happy with their salary which can be a big demotivating factor in their research activities.

Details of findings: The current pay scale is set according to the national pay scale of Bangladesh. It's relevant as they are government employees but the problem is, they are actually researchers. Researchers around the world get extra facilities which is not present here. Also, they should be also reward system for their achievement which is not present here now.

Recommendations and conclusion: The administration should prepare a different and research friendly pay scale for researchers.

2. Statement of the Problem: Researchers want promotion after a fixed period of time with a profile evaluation.

Summary of Findings: Promotion policy is not good for the employees.

Details of findings: Researchers have to wait long for promotions as promotion is given when there's an empty position. But researchers want promotion after a fixed period of time with a profile evaluation like the promotion system in academia.

Recommendations and conclusion: The administration should change its promotion policy for the researchers and avail in-situ promotion.

3. Statement of the Problem: At BLRI, age of retirement of researchers is 59 years. That's too early for a researches career.

Summary of Findings: Age of retirement is bad for both the career of the researcher as well as the productivity of the institute.

Details of findings: The current age of retirement for government employees is 62 years. But here the age of retirement is even lower. Also, we know at this age the scientists and researchers can research even better. Thus, retiring at this age is a waste of their brain capacity. It also ends their career early which must not happen at this age.

Recommendations and conclusion: The institute must increment the age of retirement according to the researchers' demand.

4. Statement of the Problem: Work force is not sufficient to run the administration of the institute and the employees have to overwork aside from their role.

Summary of Findings: The institute needs new recruits to decrease the work pressure and to increase productivity.

Details of findings: The institute has 80 scientists and 139 new are in the process of recruitment. So, it has sufficient number of researchers. But the problem is there's only 17 officers which is very low to run the administration properly. Thus, the scientists have to go through much administrative pressure with decrease their productivity. And also, they don't get separate payment for these extra works.

Recommendations and conclusion: The institute should add more officer positions and recruit new officers.

5. Statement of the Problem: No travel allowance for ministry works.

Summary of Findings: Scientists get travel allowance when they attend conferences or other official programs. But no allowance is provided for ministry works.

Details of findings: BLRI works under the Ministry of Fisheries and Livestock. It runs many joint projects with the ministry. The scientists related to those projects have to travel to the ministry a lot during the project. It costs

both his/her money and time. But he/she don't get any extra allowance for this extra effort.

Recommendations and conclusion: There should be a fund in joint projects with ministry for travel allowance and researchers should be given that travel allowance for ministry works.

6. Statement of the Problem: The regional stations don't have senior officers.

Summary of Findings: The regional stations are not self-sufficient as there are no senior officers.

Details of findings: A similar research institute is Bangladesh Rice Research Institute. Its regional stations are self-financed. Unlike that organization BLRI's regional stations are not self-sufficient.

Recommendations and conclusion: The institute should contract with the corresponding ministry to make the regional stations more active.

2.4 Conclusion

In the previous chapter, we discussed about the general introduction of the organization and the basic organizational structure of the institute along with their board of management. Problem identification is an important section in system analysis where the basis of candidate system is designed to improve the system of an institute or organization. In this chapter, we had presented and briefly discussed the problem statements on the basis of our initial approach and some of the problems of current system of BLRI. The findings of problems and the study of feasibility assisted us. Thus, we have found some problems regarding employee, work load and regional stations at the initial investigation which will certainly help to uncover more details about the institute's system and lead us towards the more detailed analysis of the system.

Chapter 3: Information Gathering & Analysis

3.1 Introduction

The prerequisite of designing a proper candidate system is to have the clear understanding of the current system of the organization, identifying the true problems of the system. That's why it's necessary to gather information of that system first. There are many structured ways to gather information such as – review of literatures, procedures and forms; on-site observation; interviews; questionnaires etc.

We get the organization basic understanding of the organization through the literatures provided by the organization and also from the website.

For the Corona situation visiting the organization on-site was not possible.

We arranged a mobile interview with one of the senior scientific officers to understand the current system as well as problems of the system.

3.2 Interview

We had an interview with a senior scientific officer of the organization. Here are the key conversations written below:

Question: Do you have to take extra responsibilities along with your designated jobs?

Answer: Yes. We do.

Question: Then do you think your organization needs to recruit more employees to reduce the work pressure? If yes, how much?

Answer: Obviously. BLRI recently created 127 new scientist positions. So, there are sufficient scientists. But the administration size is very small. I think we need to recruit around 50% of our current administration size.

Question: Do you think the employees are skilled enough or need training?

Answer: We have our training division. And train our employees occasionally. But we need to train more certainly.

Question: Do you use manual attendance system or biometric?

Answer: We use biometric attendance.

Question: In case of intercommunication among employees, do you thing level skipping occurs here?

Answer: Yes. It's a big management problem for an organization but it occurs here.

Question: Do you use any project management software?

Answer: No we do the process manually.

Question: Do you think your research facilities are sophisticated?

Answer: No organization can provide enough research facility they need. But with respect to our country our research facilities are very sophisticated.

Question: Do you have free access to any digital library with access to journals?

Answer: Yes, we have our own digital library and also, we use FAO digital library with more than 3500+ journal article access.

Question: Do you have reward system for scientist research performance?

Answer: No.

Question: Do you offer PhD degree at your organization?

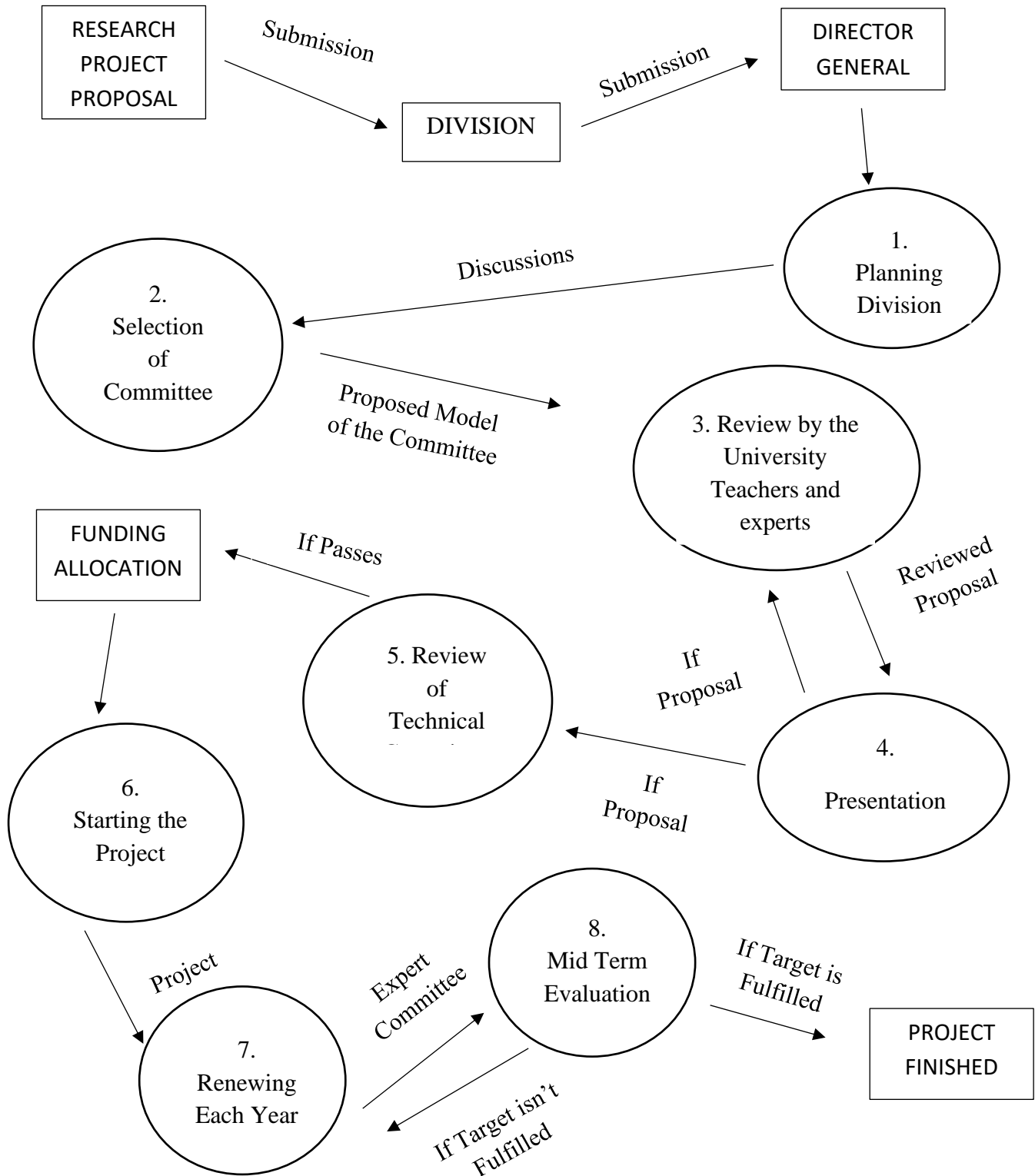
Answer: No. It's a big problem. Even in our neighbor country India these types of research institutes can offer degree. Also, not everything can be done with our regular employees but possible with students. We need this facility as soon as possible.

Question: Is your regional stations self-sufficient?

Answer: No, it's not. These are not self-financed. Thus, we can't allocate senior officers there. As a result, these stations can't perform at their best.

3.3 Overview of The Existing System

3.3.1.1 Project Workflow



3.3.1.2 Description of Project Workflow

First a researcher creates a research proposal in a certain format and submit it to the Director General of BLRI.

The DG, BLRI forwards the proposal to the planning division of BLRI. (1) The planning division analysis the primary criteria and forward it to the selection committee. (2) The selection committee is consisted of the DG, BLRI and all the divisional heads. The selection committee forwards the proposal to expert reviewers (3) – a team of university professors and some other field experts. They evaluate the proposal, give recommendations and make changes. Then the scientist has to present (4) his revised idea in front of the expert committee. If he/she can pass the proposal is forwarded to the technical committee of BLRI for funding allocation. (5) Technical committee review the budget and other components and finalize the funding.

At this point the project comes in operation. (6) The project begins in June-July session. And have to be renewed each year if extended. (7) There is also a mid-term evaluation of the running project by expert committee for maintaining good project quality.

The input of the workflow is project proposal and funding. And the output is enhancement in technology or a new technology.

3.3.2.1 Root Level Training Program Workflow

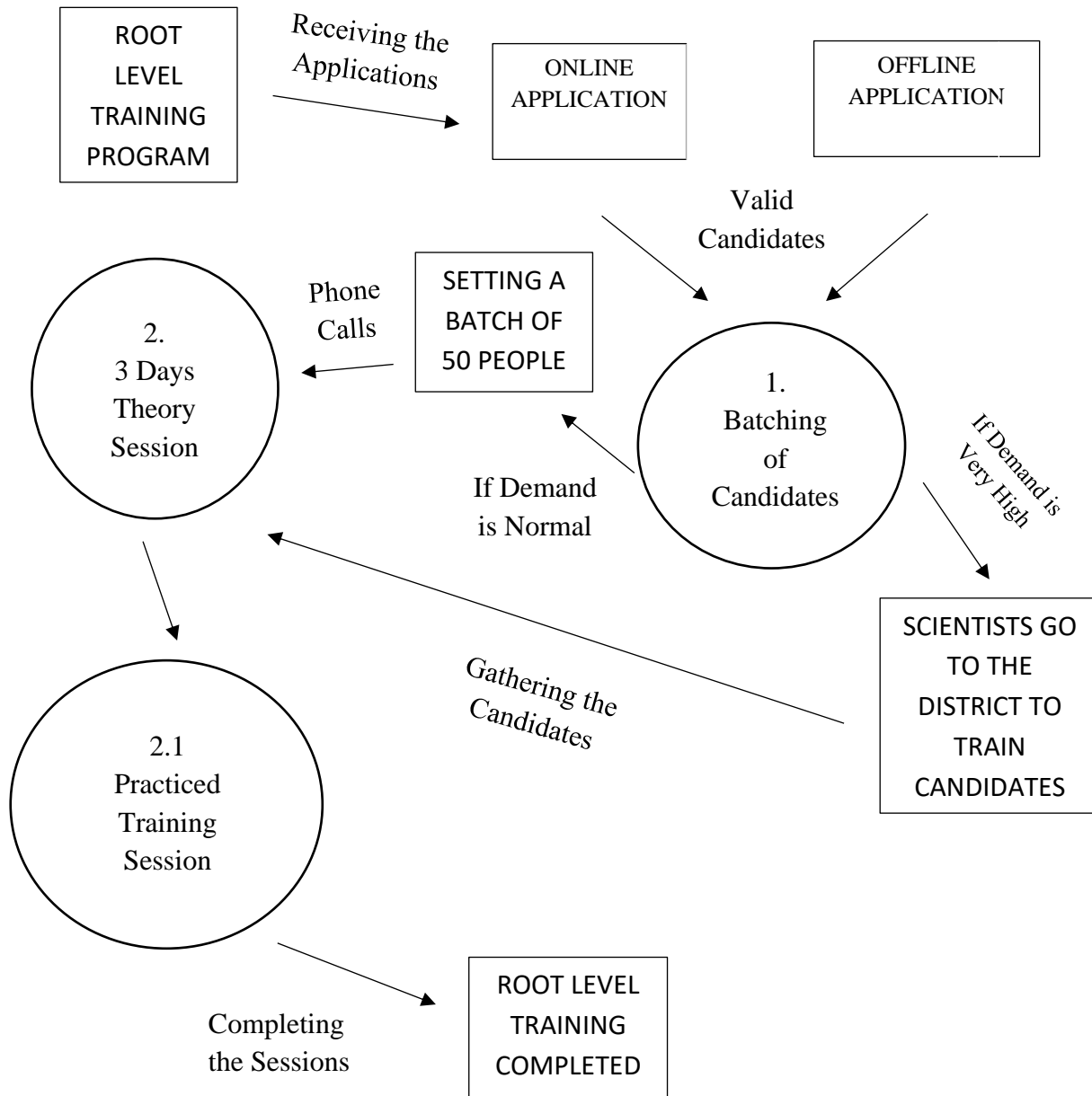


Fig : DFD of the Root Level Training Program System.

3.3.2 Root Level Training Program Workflow

BLRI hosts many root level training programs for farmers and livestock farm owners for the betterment of livestock quality.

After announcing BLRI accepts both online and offline application. From the applicants the organization forms batch of candidates. (1) Each batch has 50 participants. Then BLRI confirms participants with a phone call. Then they arrange a 3 days theory and practical session. (2) If there are too many applications from a certain region, scientists go there to train them hands-on.

This training is held in both central and regional stations.

3.4 Analysis of the Interview

From the above-mentioned interview, we have found some major problems that we didn't understand our initial study.

The regional stations are don't have separate finance. That's why these are not self-sufficient. For this reason, senior officers can't be assigned here.

We find a reason behind lagging in research work is that this organization **can't offer PhD degree**. If that was possible than the research activity would certainly increase. Also, the **workforce limitation** can be somehow mitigated this way.

We also came to know from the interview that **no project management software is used to maintain the project timeline**. That makes the project timeline less flexible. Also, there's no separate project manager position. Scientists themselves maintain the project. So, there may be some lacking.

Also, the employees lacks some skills and need more training.

3.5 Analysis of the Data Flow Diagrams

The first DFD of the project workflow shows that the process is very sophisticated actually.

In the second DFD of root level training system we found that this is not applicant friendly. Root level farmers are not capable of online application. Also, it's hard for

them to download and fill up an application form in rural areas. Thus, we suggest a SMS application system to make the program reach everyone.

3.6 Analysis of Some Newspaper Report

From some news we found online, we come to a conclusion that one of the biggest problems of this system is corruption. It's lowering the organizations value and research output.

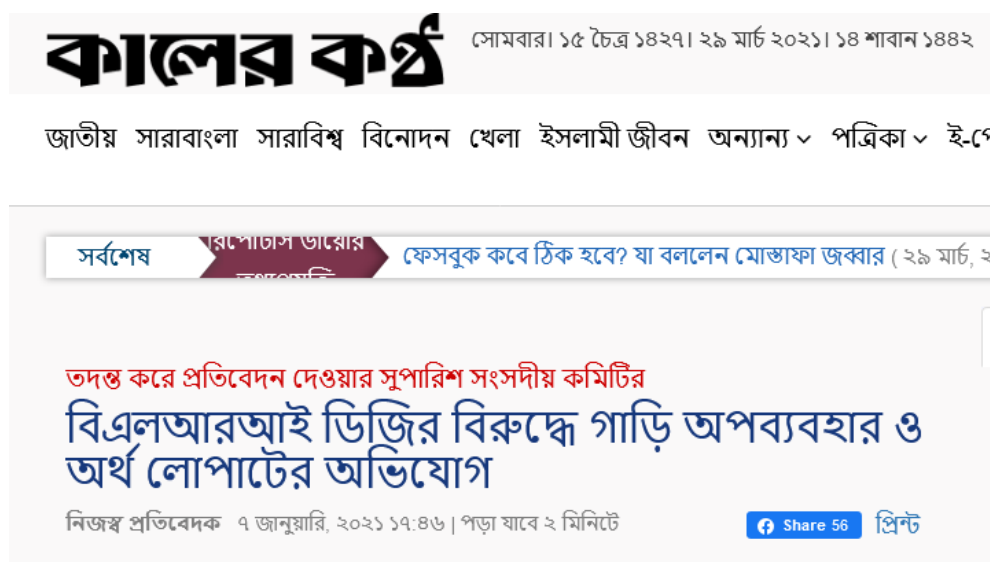


Fig: Corruption of DG, BLRI

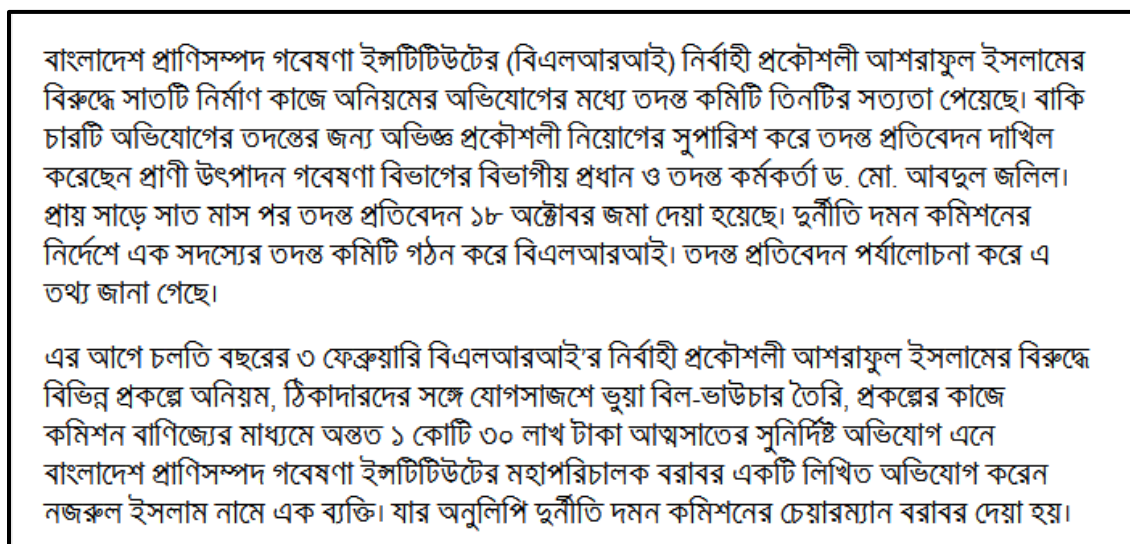


Fig: Corruption of BLRI executive engineer (currentnews, 26-Nov-2020)