

# **SERVICE DELIVERY THROUGH NATIONAL IDENTITY SYSTEM IN BANGLADESH**

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## **Introduction**

The government is implementing Digital Bangladesh agenda which has translated into a broad array of ICT applications being used in the public sector. Utilization of ICT perhaps generated the most prominent governance improvements in Bangladesh in last few years. The Digital Bangladesh agenda treasured wide public support and formed high expectations for an improved State's performance in delivering services to the citizens and how the state interfaces with its citizens.

Bangladesh's impressive economic and social progress demands sustainability by effectively reduce poverty and corruptions. An efficient service delivery through authentic identification provides a solid base for the state to ensure citizens' right to acquiring services. With the introduction of National Identity System (NIDS) and smart national identity card for the citizens, a new era for efficient service delivery at low cost has already been designed. In achieving SDG goal, 16.9 'By 2030, provide legal identity for all, including birth registration', Bangladesh has advanced well by launching NIDS. Effective use of NIDS shall enable transparent, effective and efficient service delivery under a corruption free environment and establish good governance.

An important foundation for an effective service delivery is the State's capacity to identify citizens accurately and quickly and the ability of individual citizens to track what services they are entitled to receive from the State. A full-fledged NIDS is expected to bring several benefits. The verification capacity of a system will counter leakage in the provision of a wide range of government benefits, particularly in the large number of social protection programs run in Bangladesh. Unique identification of citizens will allow all public service entities to build and maintain reliable databases of recipients which in turn will provide better ground for policy making, targeting of benefits, and record-keeping in general.

## Identifying Service Deliveries

### Present System of Government Service Delivery

At present, around 384 types of services rendered by Bangladesh Government through its 58 ministries and divisions. Service Deliveries are orbiting around corrupt practices and harassment with analogue/manual system, which ascends huge dissatisfactions against Government. Lack of transparency and accountability is a common singularity. Unjust influence by vested groups and sub-servient attitude of the government officials are primarily responsible for creating impediments in acquiring minimum services. Present system hampers service deliveries and smears Government's drives to benefit end citizens. The present system is also too expansive in terms of money, time and efforts.

### E Services in Bangladesh

Bangladesh has progressed significantly in rendering wide spectrum of e services after the present government implementing Digital Bangladesh. A national e service system (NESS) has been in place to ensure quality and compliant e service deliveries for the citizens. E-Services initiated by government within a short span of time are given below<sup>1</sup>:

- Online Applications
- Online Registration
- Passport Visa and Immigration
- Education
- Finance and Trade
- Exam Results
- Postal and Courier
- Recruitment
- Ticket booking and Purchase
- Vehicle Services
- Radio TV news
- Admission
- Agriculture, Fisheries and Livestock
- Utility Bills
- Training
- Directory
- Ask your questions

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1. <http://bangladesh.gov.bd/>, accessed on 6 June 2017 at 2337 hours

- Health Services
- UDC
- Income Tax
- Forms
- Treasury Invoices

## **NIDS Infrastructure**

### **Establishment of National Identity Wing**

The government of Bangladesh enacted a National Identity Registration Act in early 2010 which provides the legal framework for the NIDS including the designation of a National Identity Registration Wing (NIDW) within the Election Commission Bangladesh (ECB) with authority to administer the NIDS. Requirement of a second generation NID card with robust security features was felt assessing the demand and citizen services. As such a project titled “Identification system for enhancing access to services (IDEA) has been taken to support the second phase of Bangladesh’s efforts to build a NIDS based on prevailing updated voter registration database.

### **IT Infrastructure**

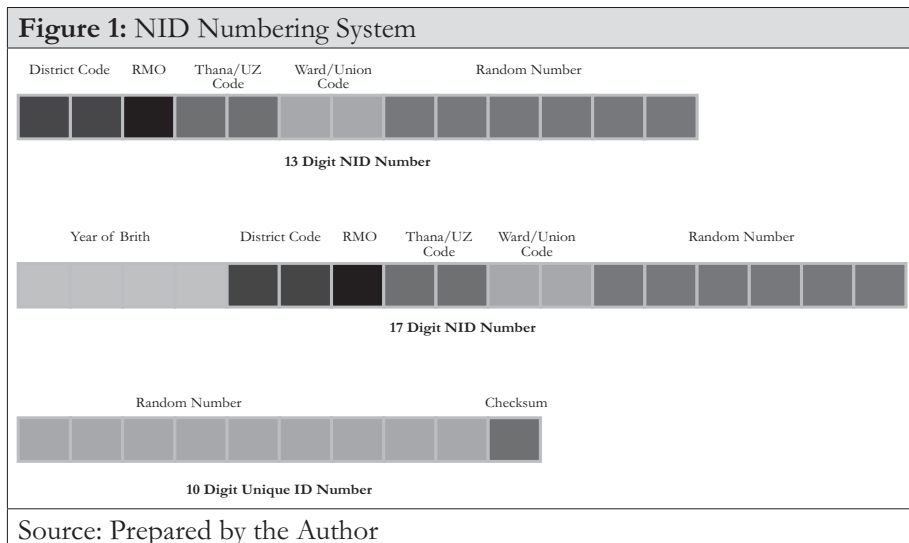
NIDW has a state of the art IT infrastructure to support NIDS. A full rack Oracle Server as Data Centre (DC) has been deployed in the National Data Centre to support this massive assignment. A compliant Disaster Recovery site (DRS) has also been established. 514 Upazila / Thana / District / Regional server stations have been established throughout the country to run NIDS. A Virtual Private Network (VPN) has been built connecting 514 Electoral offices. A world class personalization center has been established to personalize Smart NID Card.

### **Manpower**

NIDW is acutely under staffed with 71 members in the organization. It is impossible to perform assigned workloads with present authorized manpower. At present, the ongoing IDEA project supports the operation of NIDW. IDEA has huge manpower with ICT experts and Consultants. Immediate elevation of NIDW to NID Division to be planned and executed to sustain such colossal workloads. Also it is imperative to retain all trained and efficient manpower of IDEA project in the reformed manpower, failing which will bring disaster to the NIDS and thereby significant damages are anticipated.

## Concept of Unique Identification Number

In 2008, NIDW introduced paper laminated NID card with 13 Digit NID number. First two digit of the number denotes District Code, next one RMO (Rural, municipality or others) followed by next two digit as Thana / Upazila code then next two digit representing Ward / Union Code and rest six represents random numbers. 13 digit numbering system produced duplicate number in few cases intimidating veracity of the database. To avoid duplication, 17 Digit ID number was introduced by prefixing year of birth. Those numbering systems revealed information in contradiction to the law of privacy. Over the time, the numbering system exposed constraint to attain international standard and practices. Number of studies were conducted by the experts chaired by the author, and a 10 digit unique ID number was introduced. The first 9 digit is a computer generated randomized number while the 10th digit is the check sum produced by an algorithm. The system does not accept arbitrary numbers unless the exact series as generated is endorsed. Therefore, service delivery using this number ensures privacy. Figure 1 illustrates NID numbering system.



## Identification of Potential Service Deliveries Using NIDS

The following list summarizes age-wise different categories of services may be rendered with NIDS:

<b>Table 1: Age-wise Different Categories of Services</b>	
<b>Age</b>	<b>Services</b>
<b>0-6</b>	Medical Service + Health Insurance
	Birth/Death Registration
	Passport
	Immunization/Vaccination
	Child Care + Pre-school
	Orphanage
	Property Ownership and earning + Insurance
	Banking Service
	Taxation
	Child Rehabilitation / Correction
	Transportation Service
	Child Entertainment / Child Academy
	Government Benefits
	Medical Service + Health Insurance
<b>6-17</b>	Government Benefits
	Birth/Death Registration
	Passport
	Immunization/Vaccination
	Autistic / Disable Care
	Schooling
	Orphanage
	Property Ownership and earning + Insurance
	Banking Service
	Taxation
	Child Rehabilitation / Correction
	Transportation Service
	Child Entertainment / Child Academy
	Disaster Service

**Table 1: Age-wise Different Categories of Services**

<b>Adult</b>	Medical Service + Health Insurance
	Government Benefits
	Voting
	Marriage/Divorce Registration
	Driving License
	Passport
	Immunization/Vaccination
	Autistic / Disable Care
	Aging Care
	Education
	Tribal / Freedom Fighter Quota
	Freedom Fighter Service
	Orphanage
	Property Ownership and earning + Insurance
	Agriculture Service
	Banking Service
	Taxation
	Trade License and Incorporation
	Institutional Membership
	Law enforcing Services
	Cultural Academy
	Tourism
	Hotel Service + Venue/Event
	House Rent
	Birth/Death Registration
	Disaster Service
	Fair Price Food Distribution using TCB

## Social Service Delivery by the Government

### Identifications and Verifications by LEAs

LEAs frequently identify and verify citizens in performing their daily routine works. Besides ascertaining criminals' identity, significant number of police verifications and clearances are sought from LEAs in delivering social benefits.

Police, Rapid Action Battalion (RAB) and Intelligence Agencies have recently initiated verification services through NIDS and reaping enormous digital dividends. Within a very brief period, LEAs have achieved noteworthy results using NIDS. Few mentionable achievements are given below:

- Total verification done (till June 2017) - 66283
- Identifying 19 Terrorists in recent counter terrorism drive and encounters
- Identifying absconding citizens
- Identifying around 25 beheaded dead bodies
- Identifying Criminals
- Settling complex investigation and cases
- Identifying unidentified dead bodies

### **Identifying Senior Citizens' to Ensure Special Rights**

Identifying senior citizens and ensuring their rights remains a big challenge. NIDS's integrated application recognizes senior citizens automatically. Same facility has also been configured in the Smart NID card. Priority services to senior citizens may be planned through the system. A simple card reader in a public transport or in metro rail will identify senior citizen instantly to claim his special rights.

### **Benefits of Autistic Citizens**

Ministry of Social Welfare is preparing a comprehensive database of autistic and handicapped citizens. Government's initiative to such sacred cause must be supported by transparent and appropriate implementation. Authentic verification was never possible to determine appropriate handicapped or autistic citizens. Therefore, benefits and privilege allocated for such citizens were grabbed by vested groups in exchange of undue benefits. NIDS provided resilient expediences to discontinue such unscrupulous wonted practices.

### **Acquiring other Social Benefits by Citizens**

Service rendering to right citizen is often a challenge in absence of verification system when identification is left on the judgement of individual. Service delivery through NIDS automatically eliminates such possibilities due to its robust biometric authentication and verification competency. NIDS for example will ensure proper distribution of grants to the appropriate citizens by authenticating identities and maintaining electronic logs.

## **Birth and Death Registration**

BR within 45 days has been made compulsory for all citizens. Birth Certificate is a mandatory and prerequisite document to get registered in NIDS. Unrestrained and manual system of BR entails serious reservation in authenticity and integrity of BR database. 155.84 Million Citizens has so-far been registered in BR Database<sup>2</sup>. But the absence of de-duplication system challenges the quantity and quality of the Data.

## **Casting Votes**

Voting in Bangladesh has always being controversially rejected by defeated candidates and parties. However, the significant confidence building of voters were generated by endorsing citizens biometrically in 2008. Most mal practices take place preceding nights of the Election Day. Occupying polling centers, Stuffing, casting false votes, snatching ballot boxes, obstructing people from casting votes, fighting to dominate areas etc. are very common facts of the D-day. NIDS with biometric verification capabilities can play a very significant role in addressing those issues and ensure transparent and fair election using Digital Voting Machines (DVM). The system will ensure the following:

- Free and fair election
- Authenticate citizens with biometric verification
- Voting machine ensures time bound operations
- Voting cannot be casted without the presence of the legitimate voters
- Voting second time or proxy voting is impossible
- Instant result
- Secured, accurate and transparent system

## **Passport and Immigration**

Issuance of passport regarded as one of the prime source of corruption. The most treacherous being the issuance of passport with fake data or manipulated data. This poses a significant threat to the national security. Also it allows criminals, hooligans and mafias to pass through checkpoints unidentified.

Department of Immigration and Passport (DIP) got connected with the NIDS in 2015. By using NIDS, DIP may achieve followings:

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2. Office of the Registrar General, Local Government Division, Dhaka (As on 08 July 2017 till 2300 hours)



- Issuance of passport with proper biographic data
- Transparency in the system
- Stop corrupt practices
- Shortening time of issue of passports
- Protect national security
- Retains integrity and reliability of the DIP
- Retains appropriate desirable image of Bangladesh in international community
- Redundant Police Verifications
- Establishment of e gates in checkpoints
- Use of Smart Card as Travel Card

### Taxpayer's Electronic Identification Number (eTIN)

National Board of Revenue (NBR) was the pioneer to use NIDS since 2013. After electronic TIN (e TIN) was introduced, NBR extensively used NIDS to authenticate taxpayers<sup>3</sup>. 1.8 million Ghost Taxpayers out of total 3.0 million were identified and removed. Table below shows the usage of NID verification by NBR:

<b>Table 2: NID Verification in Fiscal Year 2016 – 2017 by NBR</b>		
Months	Verification	Percentage
July 2016	60770	4%
August 2016	108163	8%
September 2016	81492	6%
October 2016	114966	8%
November 2016	407836	29%
December 2017	241034	17%
January 2017	111973	8%
February 2017	72161	5%
March 2017	59745	4%
April 2017	55197	4%
May 2017	67421	5%
June 2017	34759	2%
<b>Total</b>	<b>1415517</b>	
Source: NID Database, Election Commission Bangladesh, July 2017		

3. IDEA Project, 2015, World Bank mid-term review report, Dhaka

During the month of November 2016 total 29% taxpayers were endorsed / verified (Income Tax Fair 2016).

## Marriage Registration

Attainable marriage age for girls is 18 years in Bangladesh. UNICEF study shows that around 29% girls are married during or under the age of 15<sup>4</sup>. Government's zero tolerance against child marriage does not proscribe such incidents primarily because of the absence of supervision and verification system. NIDS delivers a unique opportunity and prospect in eliminating menace of child marriage from the society. Marriage registration through NIDS to be made compulsory to prevent and curb child marriage.

## Biometric SIM Registration

On 16 December 2015, Bangladesh government took a historic initiative to impose biometric SIM registration mandatory using NIDS by Mobile Network Operators (MNO). Bangladesh is the first country in the world to complete the process.

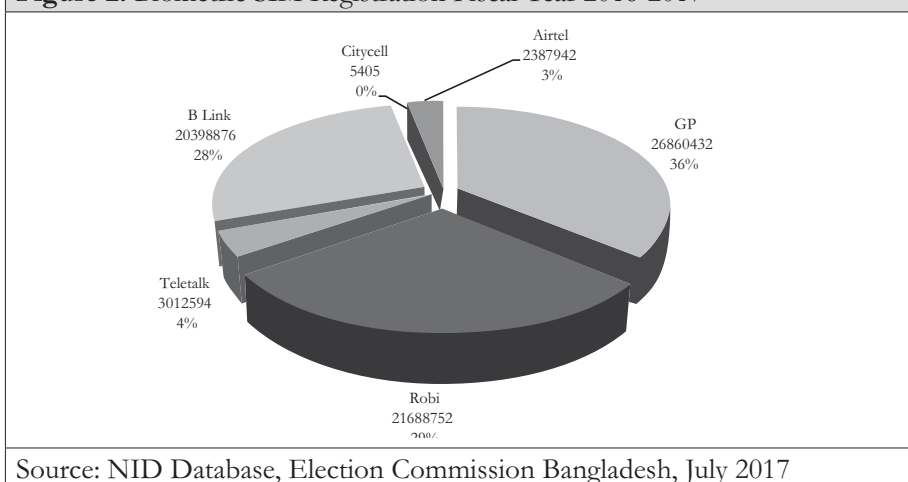
Biometric SIM registration improved security to a significant level. According to BTRC, over 130 million biometric SIM registration completed till June 2017 through NIDS. Table 3 shows month wise biometric SIM registration in the fiscal year 2016-2017.

<b>Table 3: Biometric SIM Registration by MNOs Fiscal year 2016 -2017</b>						
<b>MNOs Verification</b>						
<b>Months</b>	<b>Verification</b>					
	<b>GP</b>	<b>Robi</b>	<b>Teletalk</b>	<b>B Link</b>	<b>Citycell</b>	<b>Airtel</b>
<b>Jul-16</b>	2166216	1102200	270405	2131529	3905	260225
<b>Aug-16</b>	2250137	1353050	235695	2298432	1263	232979
<b>Sep-16</b>	2197065	1346480	216234	2494390	171	233054
<b>Oct-16</b>	2338758	1438984	108199	2553688	66	235173
<b>Nov-16</b>	2613463	1797829	481841	1771165	0	288367
<b>Dec-16</b>	2794389	1492404	829155	1991815	0	526934
<b>Jan-17</b>	2329564	1497951	291745	1441559	0	463620
<b>Feb-17</b>	1927265	1831434	138309	1184552	0	147590

4. UNICEF Report on Child marriage, Bangladesh

**Table 3:** Biometric SIM Registration by MNOs Fiscal year 2016 -2017

<b>Mar-17</b>	2008730	2458592	97663	969150	0	0
<b>Apr-17</b>	1974381	2733833	221736	1101198	0	0
<b>May-17</b>	2058065	2734886	78336	1277802	0	0
<b>Jun-17</b>	2202399	1901109	43276	1183596	0	0
Source: NID Database, Election Commission Bangladesh, July 2017						

**Figure 2:** Biometric SIM Registration Fiscal Year 2016-2017

## Financial Service Delivery

### Revenue Generated by NIDS

NIDW since inception was perceived to have self-financed unit of the government. But such idea was turned down by the government during enactment of rules and regulations. As such the revenue generated out of NIDS are deposited by collecting Banks and treasury to exchequer's head directly. Since September 2015, Election Commission Bangladesh generated revenue as under:

**Table 4:** Revenue generated by NID wing from September 2015-30 May 2017

Serial	Source	Amount in Taka
1	Verification Services	46,60,20738.00
2	Agreement / Licensing Fee	7,17,35666.00
3	Corrections / lost card reissue	25,86,05616.00
	<b>Total</b>	<b>79,63,62019.00</b>
Source: NIDW, Election Commission Bangladesh, July 2017.		

## **National Identity Account (NID Account)**

NID Account is a concept developed by the author to facilitate service deliveries. The concept is to open an account centrally when a new NID number generates. Detail discussion with the Governor of Bangladesh Bank was made and subsequently number of stake holder meetings and focus group discussions were conducted. A2i is implementing the technical aspect of the system with Bangladesh Bank.

## **Subsidies and Financial Services**

### **Delivering Subsidies**

Government delivers subsidies in different forms to unserved, underserved and poor people. Significant mal practices are observed during identification and preparation of lists of entitled citizens. The corrupt practices go on until disbursement. Therefore, Government's good practices to implement good governance remain at the peril of those scrupulous elements. Delivering subsidies through NIDS will ensure transparent and accurate distribution of government resources to the right citizens.

### **Financial Allowances**

Financial allowances are never justly distributed as it deals with the hard cash. Targeted citizens of such tiers are supposedly socially deprived citizens with no access to the regular banking system. Therefore, hard cash handling remains the only option for disbursement encouraging huge corruptions and mysterious transactions. Automation with robust NIDS will seal all possible leakages and ensures absolute transparent and efficient service deliveries.

### **Acquiring Government Benefits**

Government declares aids and grants for the citizens to recover from natural calamities like flood, cyclone, draughts and epidemics. In Bangladesh, tackling such emergencies allegedly rises huge corruptions in the name of destitute citizens. NIDS being flexible and simple, allow to tackle such special operations from anywhere using Data Services of MNOs. Government should declare mandatory use of NIDS in delivering such services.

## Pay and Allowances

### Pay Fixation

New pay fixation came into effect from 01 July 2016 using NIDS. Around 400 thousand applications were received by NIDW to correct biographic information of the government employees to correspond with service records. The analysis revealed few interesting deductions:

- Many employees were enrolled reducing age ranging from 05-20 years.
- Submitted other's educational certificates thereby endorsed false biographic information as per certificate.
- Changed father's name to avail quota
- Son becomes senior to the father

Over 25 million government employees fixed pay through NIDS during April to July 2016. 2.5 lac ghost employees of the government were detected and eliminated. Table 5 shows the month wise pay fixation completed by government employees in fiscal year 2016 – 2017.

<b>Table 5: Pay Fixation Completed in Fiscal Year 2016 -2017</b>		
<b>Month</b>		<b>Verification</b>
Jul-16		232004
Aug-16		143138
Sep-16		39245
Oct-16		30360
Nov-16		25110
Dec-16		16181
Jan-17		20590
Feb-17		22807
Mar-17		27256
Apr-17		15069
May-17		18117
Jun-17		12879
Total		602756
Source: NID Wing, Election Commission Bangladesh, June 2017, Dhaka		

## **Pay Disbursement**

Government pay may be disbursed using NIDS to ensure accountability. The office of Accountant General wastes unlimited time to fix up routine and simple issues. The primary school teachers and low level employees are the worst victim of harassment and under compulsion pay bribe to get their rights and hard earned money. Even high officials sometimes are no exception to embrace such treatments. Automation through NIDS shall waive such precedence and make system transparent and efficient.

## **Retirement Benefits**

An employee travels extensively to district, division and central offices to claim and acquire his retirement benefits. These countless tours turn out very costly. Harassment and embarrassment becomes common for most of the employees. Automation using NIDS shall ease the process and reduce movement of the people considerably saving time, money, efforts and fuel.

## **Pension and Commutation**

Pension and Commutation claim for an employee is the final stage of one's colorful service career. But an employee receives most erratic, chaotic and insulting treatment, that compel him to spend noticeable amount of so called speed money followed by paying some percentage of his commutation amount to acquire claimed pension. Government rules allow family pension till husband or wife is alive and continue by his or her infant child till his adult age or autistic child for life long. Surprisingly, pensions are being claimed for years and generations after generation. A huge amount of financial losses are estimated every year and there exists no checks and balances. NIDS offers secure way of protecting one's rights and also protects pilferage and reduces corruptions.

## **Monitoring**

### **Monitoring by Central Bank**

The Credit Information Bureau (CIB) of Bangladesh Bank is responsible for collection, processing and maintaining an updated database of credit related information supplied by participants, institutions which extend credit. One of the objectives behind setting up CIB was to minimize the extent of default loans by providing the participants with timely reports on credit information based on the enquiry/request about the loan applicants so as to facilitate credit risk

analysis by the banks / Financial Institutions (FIs) and decide promptly on the loan applications. CIB uses NIDS for verifying client's identity. It reduces volume of works to check documents for identity and thereby speed up the process of sanctioning loans.

The central bank through NIDS may perform:

- Identifying Dubious Transactions
- Identifying Terrorist Financing
- Prevent Money Laundering
- Determine Irregular Transactions

## **Payment Services**

### **Mobile Banking and Mobile Financial Services (MFS)**

Bangladesh is the champion and said to be a role model of financial inclusion. Almost 75% un-banked people now make transaction through MFS. In February 2015, around 43 plus million USD was transacted through MFS in Bangladesh<sup>5</sup>. Misplacement of money through MFS has gone on history after biometric SIM registration and identification and authentication of banks through NIDS was successfully implemented.

### **Money Transfer by Courier Services**

Courier is another authorized means of transferring money. In Bangladesh “SA Poribohon” is a very popular money transfer courier service. Western union also plays a significant role in transferring money worldwide. NIDS can play a vital role to track and log such transactions with authentications. This will help government to prevent extortion, dubious transaction, anonymous transactions and terrorist financing.

### **Hauula / Hundis**

A very traditional means of transferring money. Though the trend of inland Hundi and Hauula is decreasing due to MFS, but it remains a major means of remittance. Labors and low income people working abroad always feel comfortable to send money by this method. Mr Arasthu Khan, Chairman Islamic Bank, categorically emphasized compulsory use of NIDS in such transactions to prevent flow of money through informal channels and increase remittances.

5. USAID Report, Feb 2015, “Financial Inclusion in Bangladesh”, Dhaka

## **Service Delivery in Agricultural Sector**

### **General**

Agricultural development in Bangladesh made a revolution. Agriculture contributes 14.75%<sup>6</sup> in the GDP. Present Government's relentless efforts to develop agriculture sector is phenomenal. Farmers, the foremost driving force and unsung heroes are still deprived of their rights. Significant development and transparency in agricultural service deliveries have been made, yet inclusion of NIDS in agricultural service deliveries will boost development and ensure transparency in manifolds.

### **Farmers Account**

Farmers Accounts using NIDS is a concept to deliver financial benefits to the farmers. Like NID account, Central bank may take the initiative to create Farmers Account with NID number. Through NIDS, Ministry of Agriculture may secure farmers database with verifications and authentication. The unique ID number will be used to designate account where ministry shall deliver all financial benefits through central bank. Farmers at designated time may go to any nearest bank and claim their benefits proving their identity.

### **Agricultural Subsidies**

Having created Farmers Account, agricultural subsidies may be deliver effectively and efficiently. NIDS authenticate identity of the eligible and appropriate farmers authorized to obtain subsidies. It also helps to select the appropriate scale of subsidies by analyzing assets and arable lands. NIDS with smart card has the capability of running stand-alone applications facilitating easy access to services.

### **Allotment of Fertilizers, Seeds, Fuel and Pesticides**

Scale of allotment of fertilizers, seeds, fuel and pesticides depends on the arable land in possession. The estimation and preparation of entitlement list entails partiality for gaining personal benefits by local influential. NIDS has a bright solution to this problem. An application has been developed by which, ministry may allocate and distribute such items to the farmers. The ministry can directly allot fertilizer, seeds, fuels and pesticides to the measure of arable lands. The

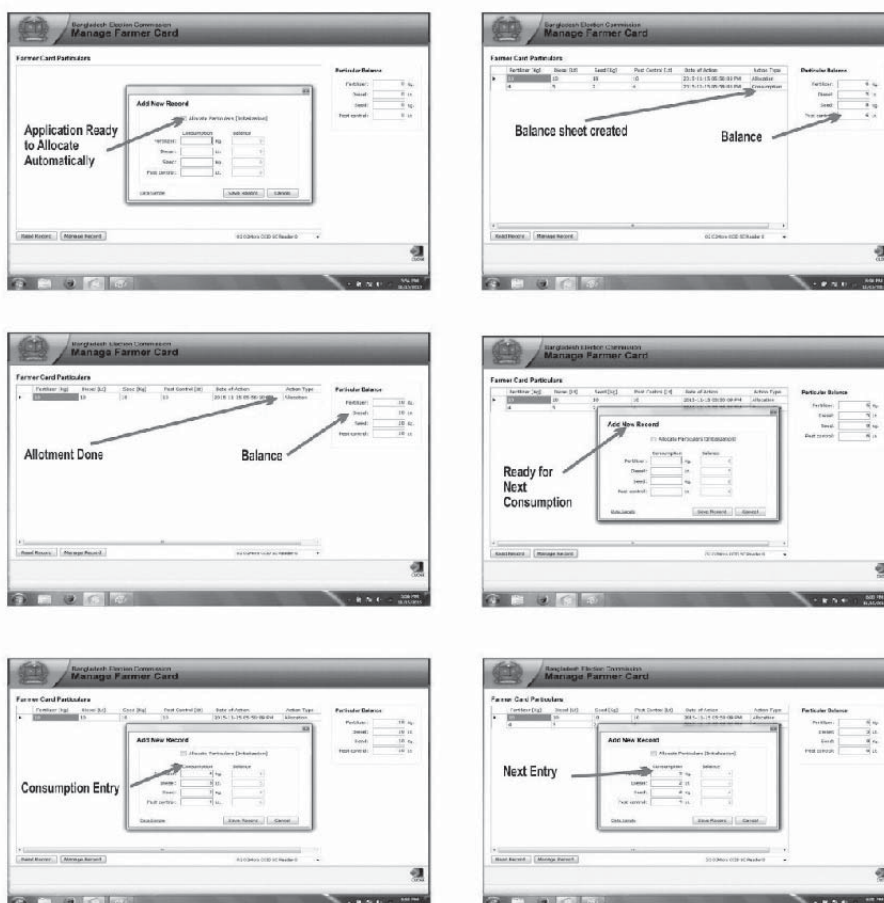
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6. Ministry of Agriculture, Dhaka Bangladesh



farmers can go to the nearest dealers and follow the process to authenticate himself through NIDS and Smart Card. The allotment is shown on the system and an instant balance sheet is created on the smart card as well as in the central database of Agricultural Ministry. Therefore, at any instance, farmer knows his authorization and balance and claims his dues and also ministry can get overall picture of stock and expenditure.

**Figure 3: Fertilizer, Seeds, Fuel and Pesticides Issue and Consumption Using NIDS**



Source: Prepared by the Author

## **Farmers Social Benefits**

Using NIDS, Farmers social benefits can also be delivered. NIDS offers such services by developing application which runs on the Smart Card. Web based service delivery considered to be one of the efficient method of rendering hundreds and thousands services through NIDS.

## **Agricultural Loans**

Agricultural soft loan is a big incentive for the farmers. Government's initiative to provide financial support to the farmers and to grow agro industries, these loans are planned and disbursed. NIDS if augmented, ensures full transparency from loan sanction to disbursement. Using NIDS authentication, NID account and farmer's account, loan should be sanctioned in a day or two.

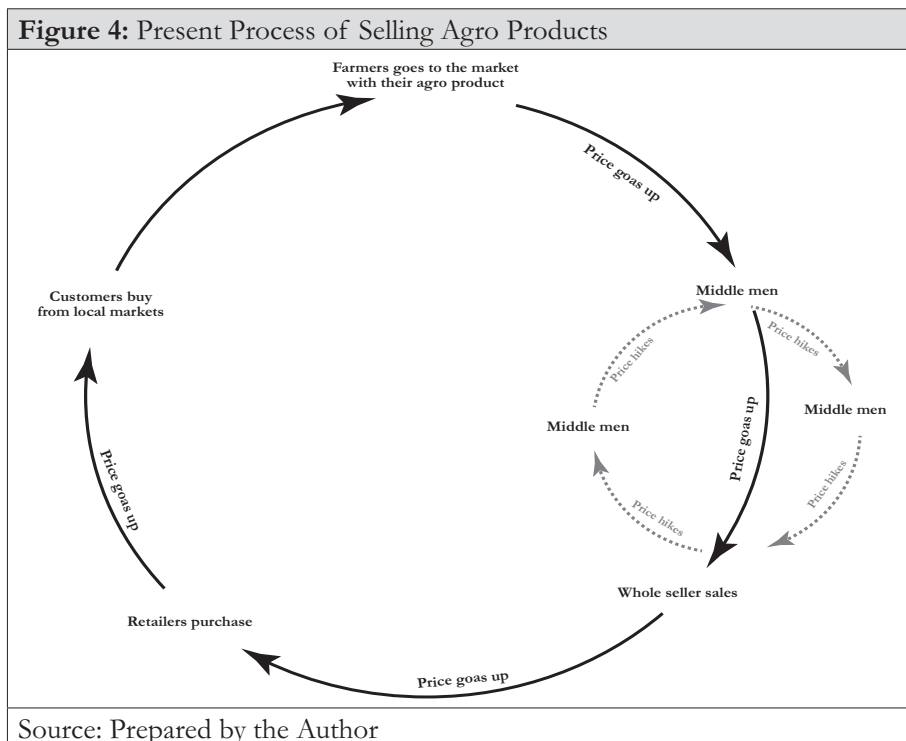
## **Farmer's (Krishi) Market**

The concept of Farmer's Market (Krishi Market) has been developed basing on NID system, Smart Card, NID account and Farmers account. The author developed the concept with a view to save farmers from force sale of his product. Generally, the farmers trade their agro products in the wholesale market or hut (Village whole sale market. In case of strikes or communication disruptions or unexpected situation, the farmers are the most effected community to sale their products at cheaper price incurring losses to avoid perishable agro products get rotten or damaged. To help farmers, the concept of krishi market was developed by the author.

## **Benefits of Krishi Market**

- Ensure appropriate price of farmer's agro products
- Reduce interference of middle men
- Market control by fixing price of the agro product centrally
- Maintaining quality of product by regular inspection
- Ensure flow of agro products to the whole seller
- Transparent transaction through Bank using NIDS and Farmers Accounts

## Present Process of Marketing Agro Products by Farmers

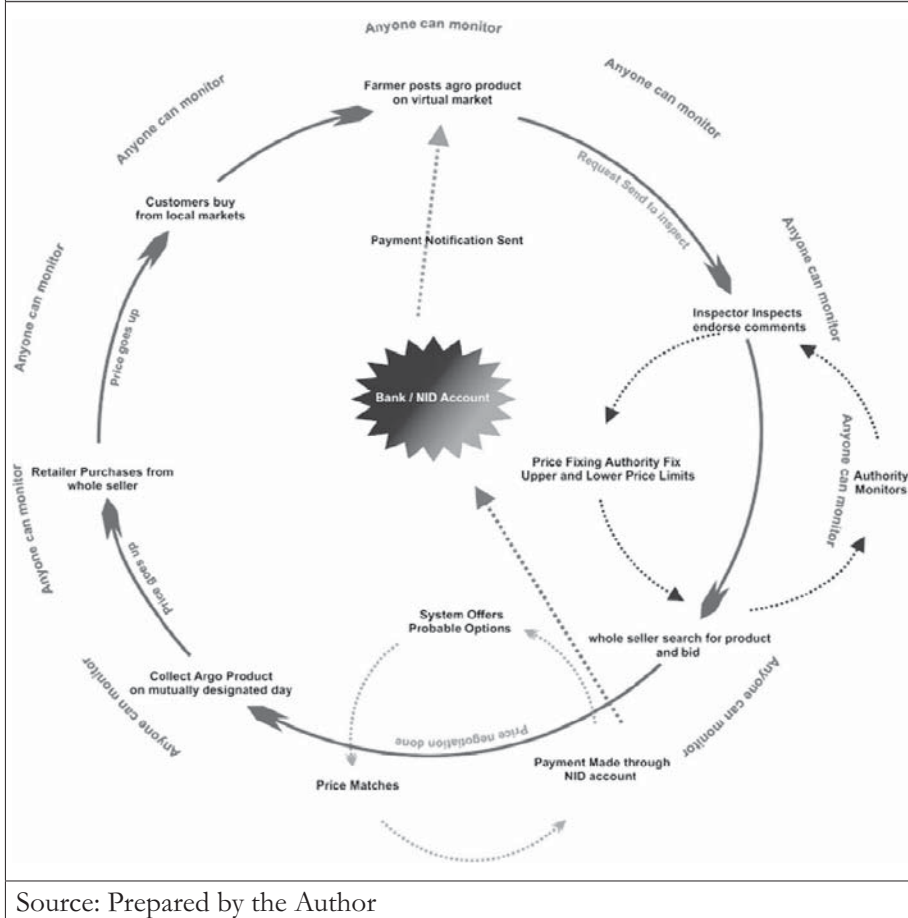


Farmers produce crops and agro products and bring it to the market. Middle men bargain to fix the price of the product and earn their profit investing nothing. Middle men then fix prices with the whole sellers and earn profit second time. As the rotation repeats the price of the agro product increases but farmers earn no extra benefits. Whole sellers then sale product to retailers fixing their own margin of profit. Finally the customers buy from retailers with much higher price than expected. The process does not benefit farmers but benefits middle men while the most sufferers being the end customers. The proposed Krishi Market will cut short all the stages in between and farmers will get their genuine price and the end customers will be benefitted too.

## Proposed Krishi Market

Krishi Market is a virtual market. To understand the concept, share market may be compared. Here the farmer register himself in the Virtual Krishi Market by using NIDS and opens his account using smart phone applications or he may take help of

**Figure 5: Proposed Krishi Market**



Source: Prepared by the Author

UDC. The farmer posts his product in the market by taking a photo. After posting a request to the inspector is automatically send to inspect the product and endorse comments with a rating and quality of the product. The price fixing authority then fix up upper and lower price limits of the product on the basis of size, quality and quantity. The whole seller logs in with his account created by NIDS and looks for his wanted products. He then chooses on the basis of product and its quality size and quantity and negotiate / bid his price in the virtual market. Upon match with the price the whole seller asked to pay through NID account and payment notification is sent to famer by the system. On the mutually designated day, the whole seller sends his representative to receive delivery of the product.

The process gives transparency in trading agro product and eliminate middle men. End customer can also view the trading and get an idea of the price of the product. As such, retailers also get some indication of the price. Overall the process controls the market price and ensures benefits to everyone specially the farmers.

## **Recommendations**

- **Institutional Upgradation**
  - NID wing to be elevated to a division.
  - NID Division to be allowed to perform like corporate offices with self-financed provision which will allow recruitment of professionals and consultants.
  - Retain IDEA project manpower in TO&E.
- **ICT Infrastructure**
  - NID infrastructure to be augmented by latest hardware.
  - Immediate increase in number of storage and servers.
  - Establish own production factory for smart card.
- **Training**
  - Impart training to produce skilled manpower to run the system.
  - Train manpower in different fields and make them specialist.
  - Training to be imparted to obtain professional certifications.
- **Policy**
  - Use of NIDS in service delivery to be made compulsory.
  - All Government service deliveries to be transformed to e services.
  - NIDW to be declared as Key Point Installation (KPI).
  - Security clearance of all personnel to be done yearly.
  - Vendors may be selected as it entails secrecy and security.
  - NIDW to be reformed and may constitute an independent organization.
- **Technology**

- Latest technology must be used.
- Software must be competent and regularly updated.
- Own software development team to be made available for creating applications for service delivery.

## **Conclusion**

The successful development of an accurate and comprehensive NIDS enabled automated service delivery and expanded the use of NIDS exponentially. It is recognized that an accurate, comprehensive and reliable NIDS ensures transparency, accountability, efficiency and reliability to render services to the citizens. The system also supports effective and appropriate selection of beneficiaries and augments new services. Besides government's programs, private sectors are equally and justly benefitted to ensure appropriate compliances bind by regulations. The NIDS shall be the pivot of implementing Digital Bangladesh by the present government and shall ensure good governance in the country.

Significant improvement in rendering service delivery is gradually shifting its means from analogue to technology driven system. With the introduction of verification facilities through NIDS, a major rapid changes are visible in delivering services to the citizens. Primarily around 22 services and benefits were planned and conceived through NIDS. The NIDS at present has turned out to be an integral part of the society and daily life. From domestic use to National Security, NIDS fits in everywhere signifying an essential part of the society.

Securing citizen's right to what he is entitled from the state is ever ensured by augmenting NIDS in service delivery. Digital Bangladesh vision, ICT growth in Bangladesh, vision 2041, sustainable development goal and booming economy of Bangladesh demand good governance and curbing corruptions. NIDS is a principal effective tools to supplement accountability and transparency in the governance system. It helps curbing leakages in any system and thereby, directly contributes to the national economy and the national security.

NIDS has proven its worth in delivering secured verification and authentication services to ensure trustworthy 'know your customer process'. Anonymous and ghost appearance of customers in the financial sector is a menace which not only bang on economy but also wield a significant threat to the national security. Elimination of 1.8 million fake tax payers is a glaring example of the effectiveness of the NIDS. Protecting citizen's assets, public property and creating secured

environment is the sole responsibility of the government. MFS has proven to be one of the most vibrant segment to bring discipline in the financial sector which was almost struggling due to abusive use of cell phones. NIDS offered biometric SIM registration which protected MFS and allowed this sector to grow strongly, confidently and securely.

National security is always the top priority of the government to ensure sustainable development and economic growth of the country. NIDS turned out to be the effective tool for LEAs to apply where necessary. Identity of terrorists of recent counter terrorism operations were authentically revealed using NIDS. Augmenting NIDS to hire a house has proven to be very effective to curb terrorism and protect against creating safe sanctuary or a safe house of criminals in the country. Robust NIDS and secured smart NID card has already attained trust of the people.

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