

Overview of Animal Breeding Projects



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Presentation Outline

- Animal Breeding Activities under National Dairy Plan-I
 - National Targets
 - Bull Production through PT and PS
 - Import of Bulls
 - Frozen Semen Production
- Implementation of efficient and effective AI program
- INAPH : an Information network
- Way forward

Animal Breeding Activities under National Dairy Plan-I



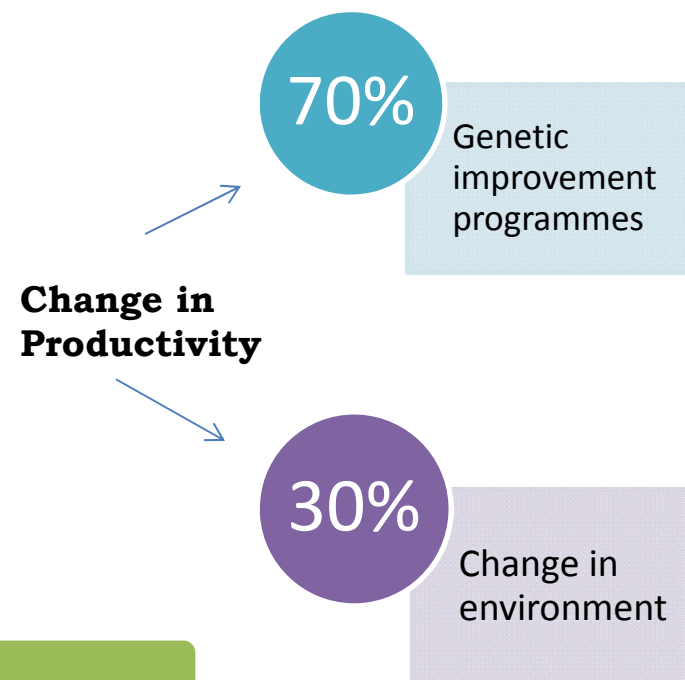
Objectives of NDP-I

- To help increase productivity of milch animals and thereby increase milk production to meet the rapidly growing demand for milk
- To help provide rural milk producers with greater access to the organised milk processing sector

Importance of Genetic Improvement Programmes

Country/Year	1975	1985	1995	2005	2008
Israel	5,885	7,919	8,739	9,822	10,431
USA	4,699	5,913	7,441	8,877	9,250
Canada	3,796	4,622	6,366	7,496	8,277
France	3,281	4,163	5,517	6,288	6,523
Denmark	4,492	5,684	6,656	8,123	8,459
Netherlands	4,623	5,370	6,613	7,299	7,111
Australia	2,844	3,441	4,646	5,215	5,337

Source: FAOSTAT



Strategies adopted to achieve genetic gains

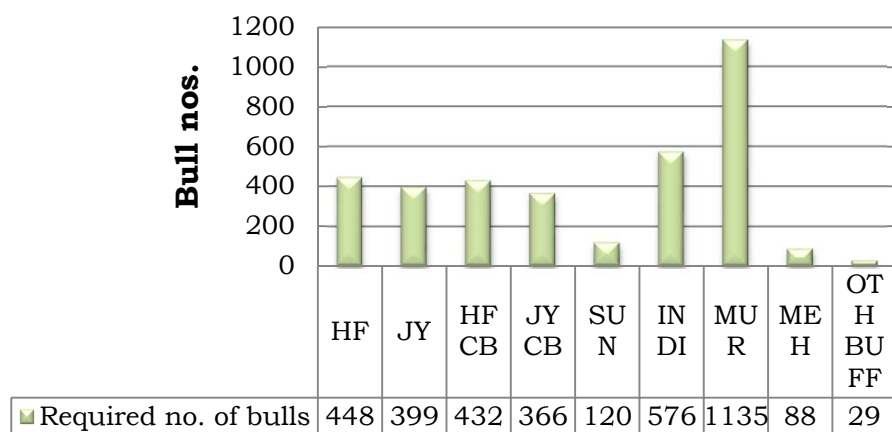
- Implementation of large scale PT programmes
- Modernization of semen processing facilities to maximize semen production per bull
- Expansion of AI delivery system to cover majority of the animals in the country
- Putting in place a large information network
- Establishing quality control systems

Targets for AI and semen & bull production

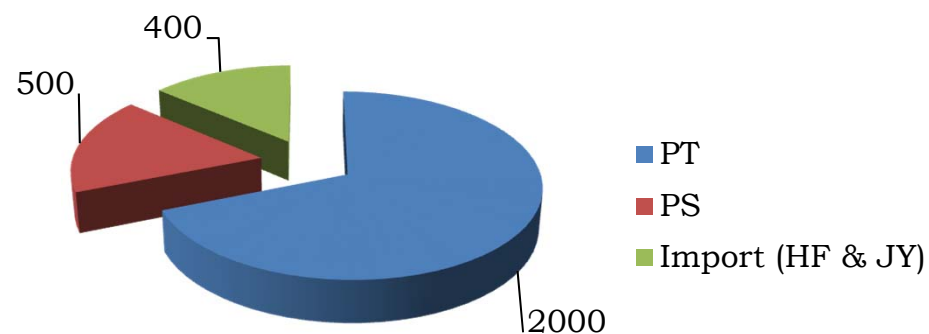
No	Particulars	2010-11 (actual)	By end of NDP I	By end of NDP II
1	% of Breedable animals to be inseminated	20%	35%	50%
2	Semen doses required in million	66.8	100	140
3	Total high genetic merit bulls required for semen production	2834	3600	4800
4	No. of bulls required for replacement	700	900	1200
5	% of replacement bulls met through genetic improvement programmes	10-15	100	100

Targets set for production of bulls under NDP-I

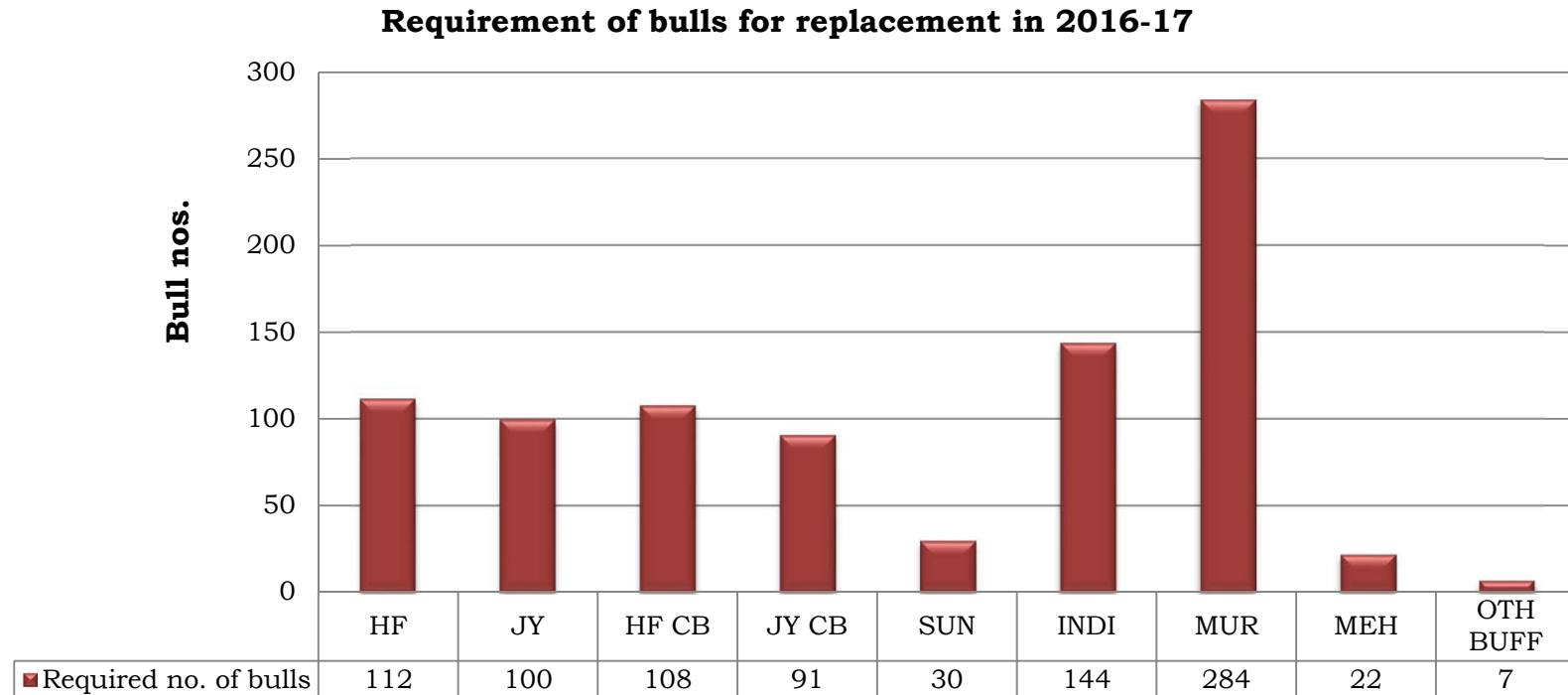
Required bulls under collection and bull production targets



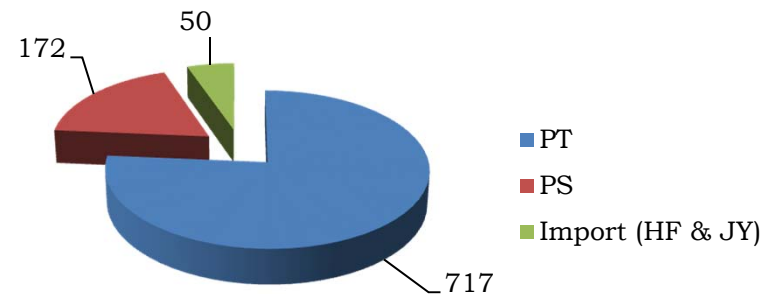
- Total bulls required for Semen production ~ 3600; availability ~ 2900
- Indigenous cattle - Sahiwal, Gir, Kankrej, Rathi, Tharparkar, Hariana, etc.
- Other buffaloes - Jaffrabadi, Nili Ravi, Pandharpuri, etc.
- Jersey – 100% import



Replacement requirement in 2016-17 under NDP-I



- Total bulls to be replaced ~ 900
- Indigenous cattle - Sahiwal, Gir, Kankrej, Rath, Tharparkar, Hariana, etc.
- Other buffaloes - Jaffrabadi, Nili Ravi, Pandharpuri, etc.
- Jersey – 100% import



** Total requirement during NDP-I: 400 exotic bulls (300 Jersey and 100 HF)*

PT Projects

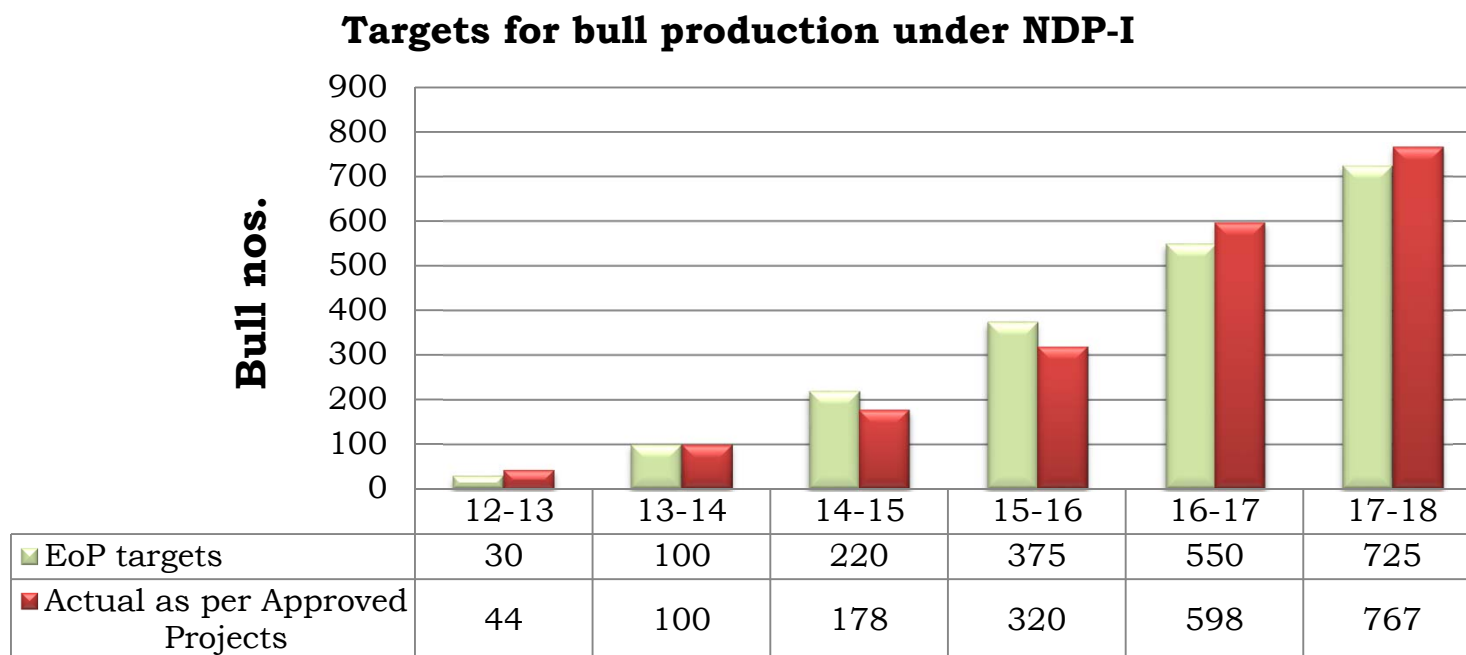


PT Programmes for production of HGM bulls of different breeds

Breeds	Breed	EIAs	State
	HF	KMF	Karnataka
	HF CB	SAG	Gujarat
		ULDB	Uttarakhand
		BAIF	Uttar Pradesh
		KLDB	Kerala
	Jersey CB	TCMPF	Tamil Nadu
		APLDA	Andhra Pradesh
	Mehsana	Mehsana Union	Gujarat
		Banas Union	Gujarat
	Murrah	ABRO	Uttar Pradesh
		HLDB	Haryana
		PLDB	Punjab
		SAG	Gujarat

These five breeds would meet 87% of the total requirement of semen doses in 2016-17

PT - Physical Targets under NDP-I



PT - Financial Targets under NDP-I

	In Rs. Lakhs	Advance released	Fund utilized	% utilization
Outlay as per PIP	21100.0			
Approved Projects	23728.1	3023.88	1763.69	58.33

Import of exotic bulls/ equivalent embryos



- 400 bulls of HF and Jersey are required to meet immediate demand of exotic semen
- Actions have been initiated to import the bulls – **NOCs** are required from respective States
- Simultaneously, actions for import of embryos have also been initiated
- Four EIAs have been identified for production of bull calves from imported embryos

PS Projects



Rathi



Kankrej



Gir



Jaffrabadi



Haryana



Sahiwal



Tharparkar



Nili Ravi



Pandharpuri Bull



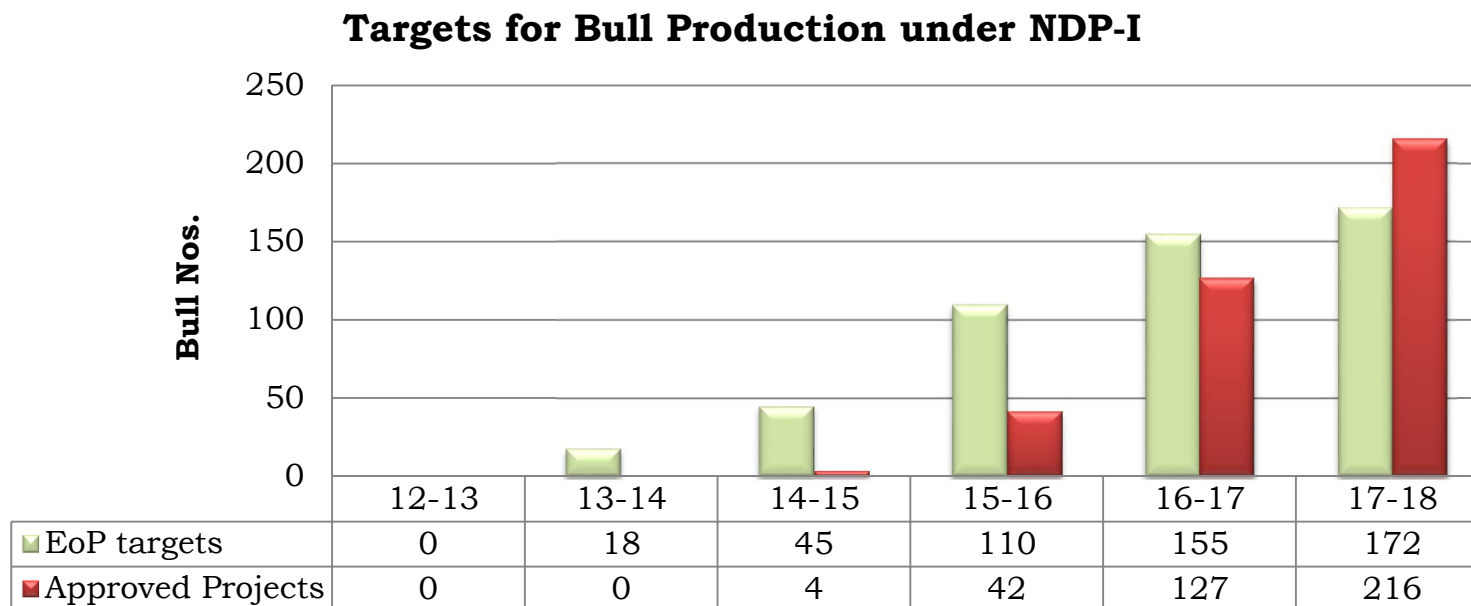
PS Programmes for production of HGM bulls of different breeds

Breeds	Breed	EIAs	State
	Rathi	URMUL	Rajasthan
	Kankrej	Banas	Gujarat
	Gir	SAG	Gujarat
	Jaffrabadi	SAG	Gujarat
	Hariana	HLDB	Haryana

PS Programmes for production of HGM bulls of different breeds

Breeds	Breed	EIAs	State
	Sahiwal	Sahiwal PS Project*	Punjab/ Rajasthan
	Tharparkar	RLDB	Rajasthan
	Nili Ravi	PLDB	Punjab
	Pandharpuri	MLDB	Maharashtra

PS – Physical Targets under NDP-I



PS - Financial Targets under NDP-I

	In Rs. Lakhs	Advance released	Fund utilized	% utilization
Outlay as per PIP	4000.0			
Approved Projects	4460.74	433.00	291.25	67.26

SSS Projects

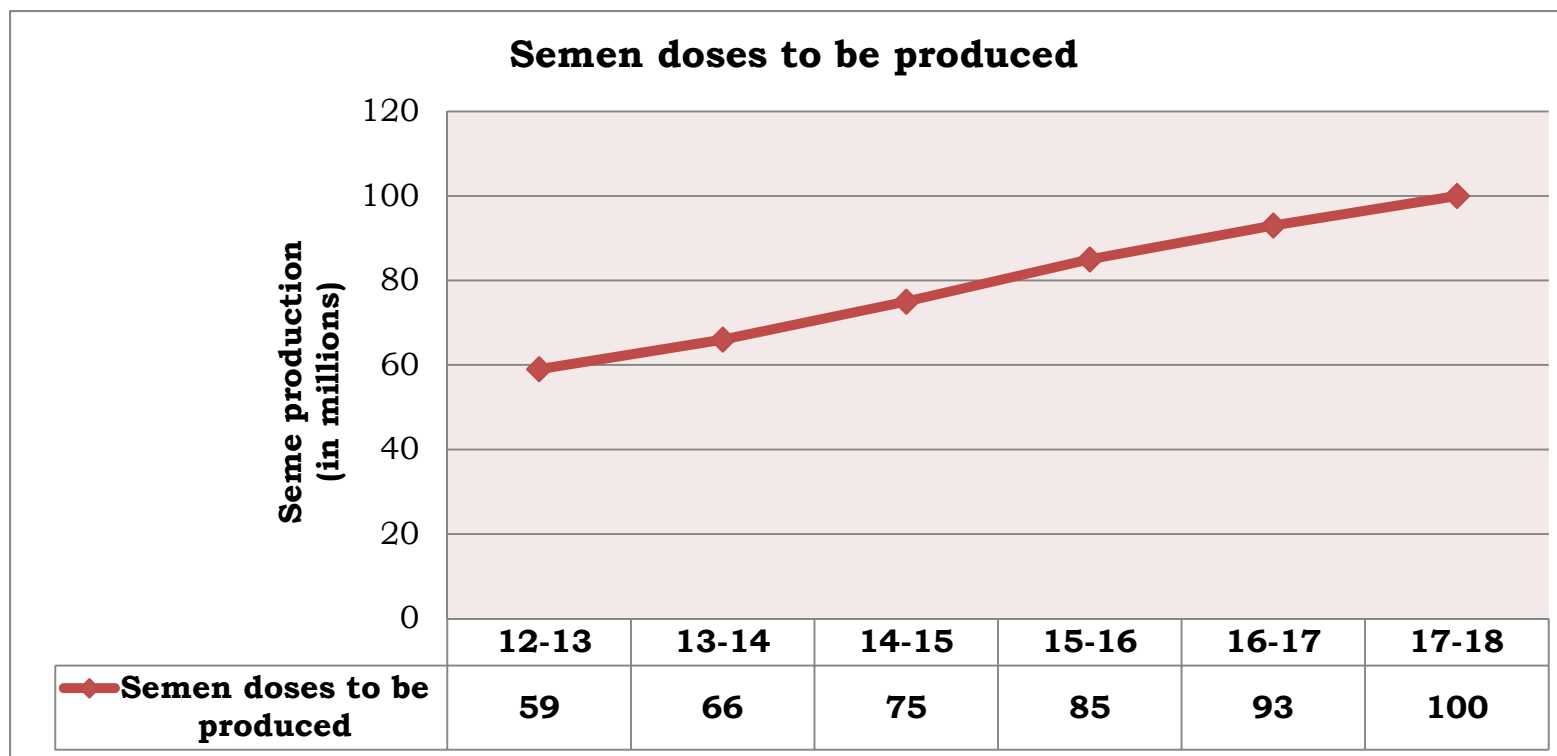


Semen Production – Current and targeted



SN	Grades	No. of Semen Stations	Semen Production in 12-13	Semen Production target in 16-17
1	A	30	61.1	100.00
2	B	14	16.9	
3	NG	5	2.3	---
4	NE	2	0.7	---
TOTAL		51	81.0	100.00

SSS – Physical targets



Breed wise projected requirement of semen doses – 2016-17

Breed	Semen prod. (in lakh)	Breed	Semen prod. (in lakh)
HF	15.70	Indigenous	11.39
JY	13.97	Murrah	28.37
HF CB	12.95	Mehsana	2.2
JY CB	10.98	Other buff	0.73
Other CB	3.59		
TOTAL		100.00	

SSS- Financial Targets under NDP-I

Particulars	12-13	13-14	14-15	15-16	16-17	17-18	TOTAL
Financial Outlay (Rs. in lakhs)	7200	9200	5000	2000	300	0	23700

SSS- Financial Status

	In Rs. Lakhs	Advance released	Fund utilized	% utilization
Outlay as per PIP	23700.00			
Approved Projects	20664.12	6692.40	2119.35	31.67

AI delivery



AI delivery

- States to review and devise a mechanism to enforce notified breeding policy
- Inseminators to inseminate following approved [SOP for AI](#)
- Accreditation of AI training centres and common curriculum for AI technicians' training

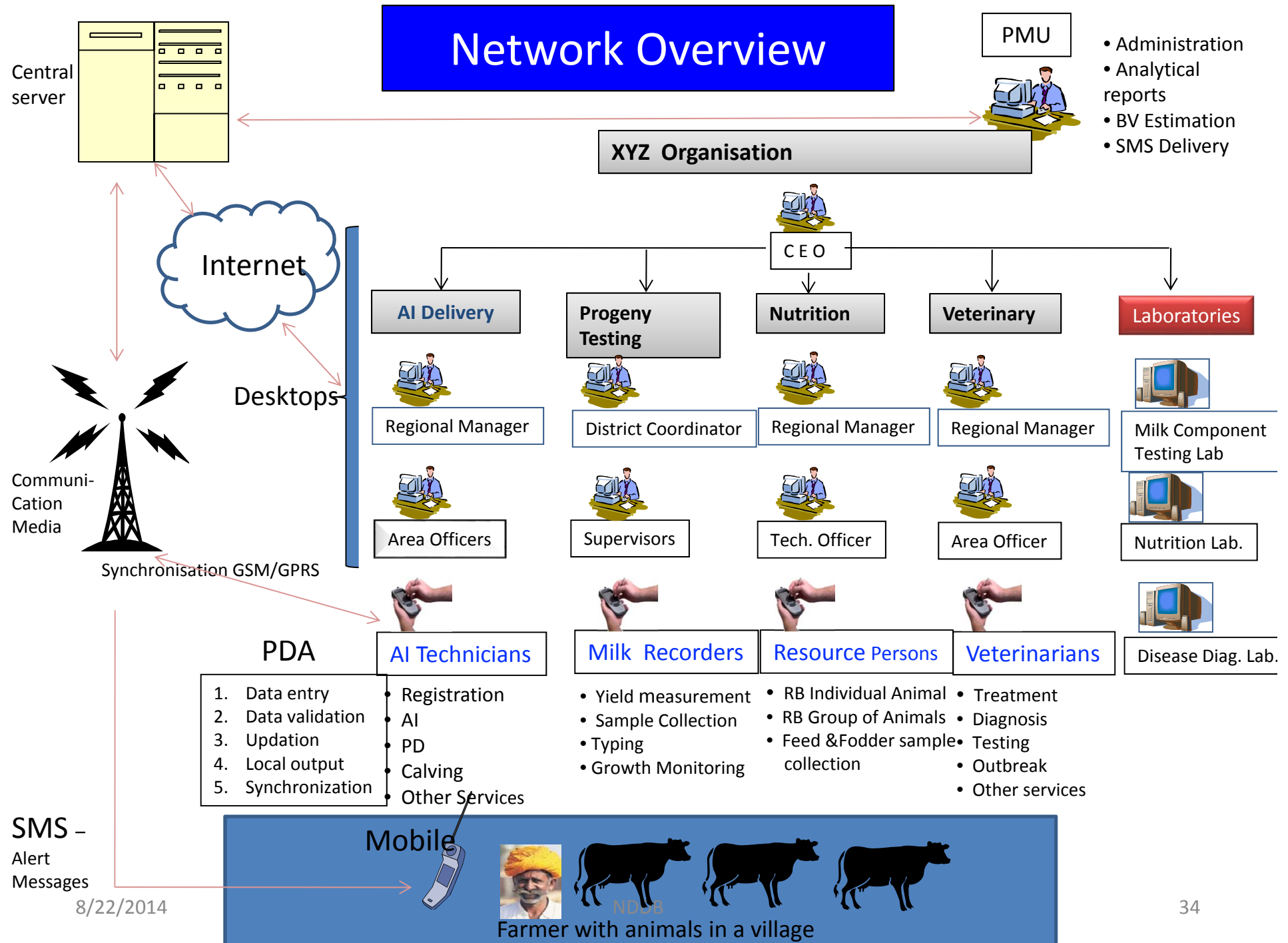
AI delivery (cont....)

- Charges for AI delivery to be raised gradually to cover full cost
- More service providers to be encouraged to provide doorstep AI services



INAPH (Information Network on Animal Productivity and Health)

Network Overview



Way forward...

- Genomic Selection of young bull calves of all breeds
- Pilot Project on use of Sexed Semen
- Bull Production through *in-vitro* fertilisation and Embryo Transfer

Convergence of Ration Balancing Programs (RBP) and Bull Production projects

- RBP is required to exploit full genetic potential of milch animals
- All animals under PT and PS projects to be covered under RBP

Vaccination programme in Bull and Semen Production projects – Convergence with AH Depts.

- Engagement of Animal Health Officer (AHO) and formation of District Level Coordination Committees for regular monitoring and coordination of vaccination in project areas with AH dept.

In conclusion...



These programmes are expected to put the country on the path of accelerated genetic progress by:

- a. Supply of HGM bulls
- b. Production of high quality, disease free semen doses
- c. Building information network on productivity enhancement activities

what country needs

THANK YOU

Standard Operating Procedures for AI

- AI service at farmer's Doorstep i.e. mobile AI technicians
- Every inseminated animal is to be identified by an ear-tag having unique number



Standard Operating Procedures for AI (cont...)



- Semen from A or B grade semen station to be used
- All calves born are to be ear tagged and registered
- All data of AI, PD and calving to be recorded in INAPH



Exit

Breed wise projected semen doses and requirement of bulls – 2016-17

	Breed	Semen doses - 2010-11 in lakh	Projected Semen prod.2016-17 in lakh	No . of Bulls -2010-11	Required bulls -2016-17	Bulls replacement - 2016-17	Proposed Programme
1	Holstein Friesian	118.52	157.0	380	448	112	PT/Import
2	Jersey	99.02	139.7	407	399	100	Import
3	HF Crossbreds	91.44	129.5	357	432	108	PT
4	Jersey Crossbreds	72.32	109.8	328	366	91	PT
	Other crossbreds		35.9		120	30	PT
5	Sahiwal	22.28	113.9	101	576	144	PS
6	Gir	14.21		67			
7	Kankrej	10.65		41			
8	Rathi	1.06		5			
9	Red Sindhi	10.12		46			
10	Tharparkar	1.38		17			
11	Ongole	4.12		11			
12	Haryana	3.99		23			
13	Khillar	2.95	7.3	20	29	7	PS
14	Other indigenous	7.13		46			
15	Murrah	182.05	283.7	823	1135	284	PT
16	Mehsana	16.48	22.0	85	88	22	PT
17	Jaffarabadi	3.22	7.3	19	29	7	PS
18	Surti	5.21		45			
19	Pandharpuri	1.02		6			
20	Nili Ravi	0.33		2			
21	Bhadawari	0.18		5			
	Total	667.69	1000.0	2834	3600	900	

HGM bull production for meeting replacement requirement under NDP-I

Sr N	Breed	Total NDP I Project Targets		
		Progeny Testing	Pedigree Selection	Total
1	Pure HF	382 + 100 (import)	-	482
2	Pure Jersey	300 (import only)	-	300
3	Crossbred HF	371	-	371
4	Crossbred Jersey	303	-	303
5	Sunandini	176	-	176
6	Murrah	565	-	565
7	Mehsana	202	-	202
8	Rathi	-	85	85
9	Kankrej	-	85	85
10	Tharparkar	-	67	67
11	Gir	-	47	47
12	Haryana	-	47	47
13	Sahiwal	-	47	47
14	Jaffarabadi	-	47	47
15	Pandharpuri	-	47	47
16	Nili Ravi	-	28	28
	Total	2000 + 400 (import)	500	2900

Financial targets - Approved projects

Figures in lakhs

Sr. No.	Semen Stations	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
1	Banavasi	0.00	563.34	78.02	6.16	4.79	7.04
2	Karimnagar	0.00	993.08	0.48	0.51	0.00	0.00
3	AMUL	0.00	121.57	401.37	427.03	3.61	0.00
4	Jagudan	0.00	665.70	4.09	4.30	6.64	7.04
5	SAG Bidaj	1610.04	281.35	84.74	89.33	94.51	0.40
6	Nandini	104.76	513.50	42.04	4.18	6.68	7.04
7	CFSP&TI, Hessarghatt	0.00	672.38	353.97	0.00	0.00	0.00
8	Mattupatty	0.00	356.94	161.66	26.28	0.00	0.00
9	Dhoni	0.00	391.50	207.83	34.44	0.00	0.00
10	Bhopal	0.00	271.26	209.77	42.23	3.16	0.00
11	Nabha	942.20	455.18	5.03	4.65	6.64	7.04
12	DLF, Ooty	146.20	406.12	73.77	4.23	8.53	7.04
13	Rishikesh	0.00	401.39	262.91	46.45	0.00	0.00
14	ABC, Salon	404.54	667.34	629.35	149.33	7.21	7.32
15	Salboni	0.00	328.44	128.62	6.33	0.00	0.00
16	Haringhata	0.00	590.63	4.13	4.31	6.74	7.04
17	Patan	0.00	0.00	470.93	90.60	14.98	0.00
18	BAIF	0.00	0.00	2202.75	1111.79	13.89	0.00
19	Bassi		0.00	620.37	722.25	14.31	0.00
20	Dama, Banas		0.00	521.34	284.08	13.36	0.00
	TOTAL	3207.74	7679.72	6463.17	3058.48	205.05	49.96

Key policy/ regulatory measures required for effective implementation of NDP I

Sr. No.	Measure
1	Having in place an appropriate breeding policy;
2	AI delivery services not being notified as a Minor Veterinary Service (MVS);
3	Charges for AI delivery being raised gradually to cover full cost;
4	Semen for AI delivery in the state being sourced only from semen stations graded A or B;
5	Adoption of common protocols and SOPs issued by DADF for all breeding activities and;
6	Notification of State Rules under the Prevention and Control of Contagious and Infectious Diseases in Animals Act, 2009.

State Category	States*
Complied or have committed the timeline for compliance	Andhra Pradesh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal (12 States)
Complied or has committed the timeline for compliance but has issue with regard to certain measures	Haryana (Measure no. 6) (1 State)
Committed timeline for some of the measures but the timeline has expired	Bihar (Measure no. 5,6) (1 State)

* Uttarakhand has also complied or have committed timeline for compliance