

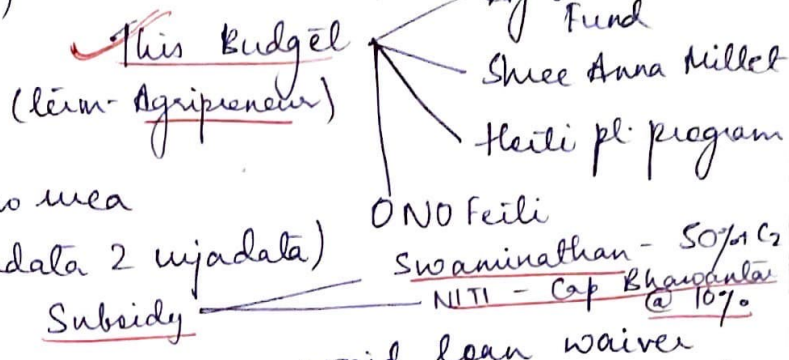
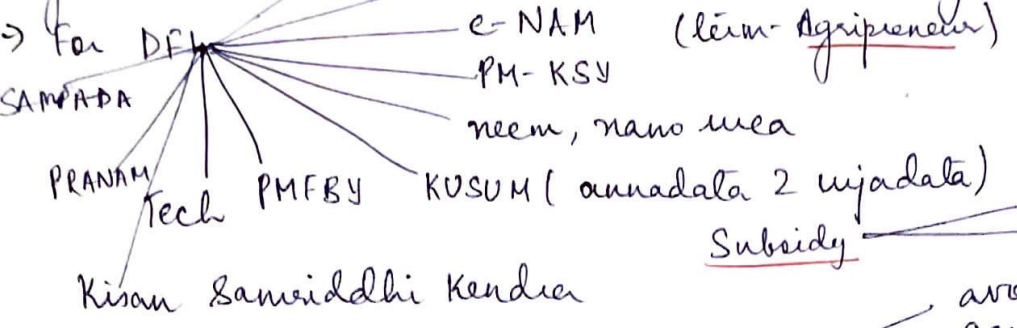
Agri Stats

- 1) Net irrigated area = 49% - 60% of this by GW Only 1/6th under micro irrigated
Eco Survey ('21)
- 2) Current Annual GR (Agri) = 4.5% (since last 6 yrs)
- 3) Rained area = ~55% (monsoon dependent)
- 4) Women in farming = 70% x rural w.; only 13% have L.O'ship
- 5) W & R / Total grain Prodⁿ = ~80%
- 6) employment = ~95%, GDP contrⁿ < 20%
- 7) Agri export = \$52 bn (target = \$60 bn for '23)
- 8) SLM landholding = 72%; avg size = 1.08 ha (10th Agri Census)
- 9) Shanta Kr — only 6% x total farmers get MSP
- 10) 52% x farmers — indebted, suicides = 12000 (last 10 yrs)
- 11) < 1% x total agri export — on R&D; mechanised farms = ~40%
- 12) India - 2nd largest producer { fruit, veggie, spices } horti — just 14% of land built 33% x GVA (agri)
- 13) Precision farming - yield ↑ by >50% & ↓ input cost by 20%
- 14) Insurance = 5x — on premium of 25k Cr, govt has given claim of 1.25L Cr
- 15) 15k Cr — AH Infra Devt Fund
- 16) 60% x water used for irriⁿ — sugarcane & rice (exporting country) Water
- Aim: 90L ha of land under precision farming by 2025
- 17) 40% x total food produced wasted (FAO); 2/3rd x storage space (PCI) — in just 5 states
- CAG: FIFO not followed
- 18) 2023-24 Budget: Subsidy expdt — 4L Cr { 1.75L — ferti, 2L — food }
- 19) NPK { ~~2:2:1~~ ÷ 8:3:1 } { ~~2:2:1~~ ÷ 4:2:1 } ideal
- 20) undernourished ppl = 25 cr. 23) 2x milk processing facility by 2025
- 21) livestock — 16% x farm HH income | Annual growth rate of milk prodⁿ = 5%
India - 1st count 47% x GDP | India's contrⁿ to world = 4%

Land Reforms

- L. Records good ex: K'taka Bhooni Portal, ULIP (part of DILRMP), SVAMITVA
- 2/3 rd x court cases — land disputes

Agri Finance

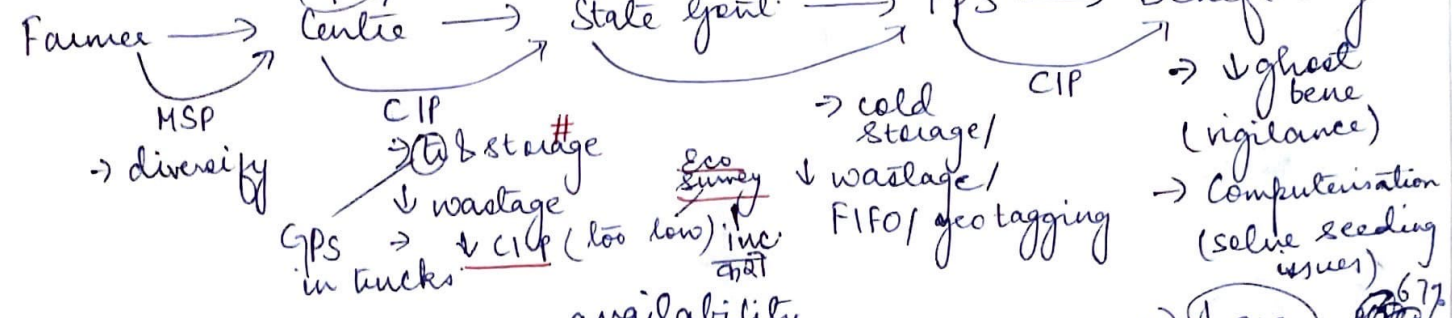


- Mahesh Jain Committee on Agri Ci
- Kelkar Comm. on subsidy
- avoid loan waiver
- agri loan w/in 59 mins
- set up Ci Guarantee Fund
- phosed eln
- rationalⁿ of feiti subsidy

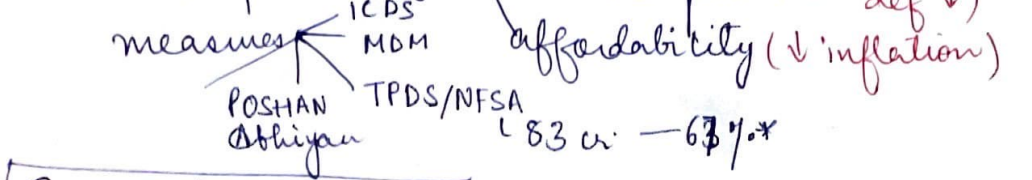
Feminⁿ of Agri

- gender Budgeting ↓ post 6-7 yrs.
- govt initiatives
- NFSA ration card
- AXTMA (agri tech mgmt agency)
- AIR & Aardarshan (a gender coordinator for state)
- 1 day for women farmers (media support)

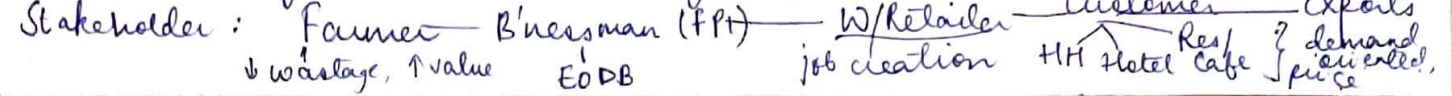
PDS

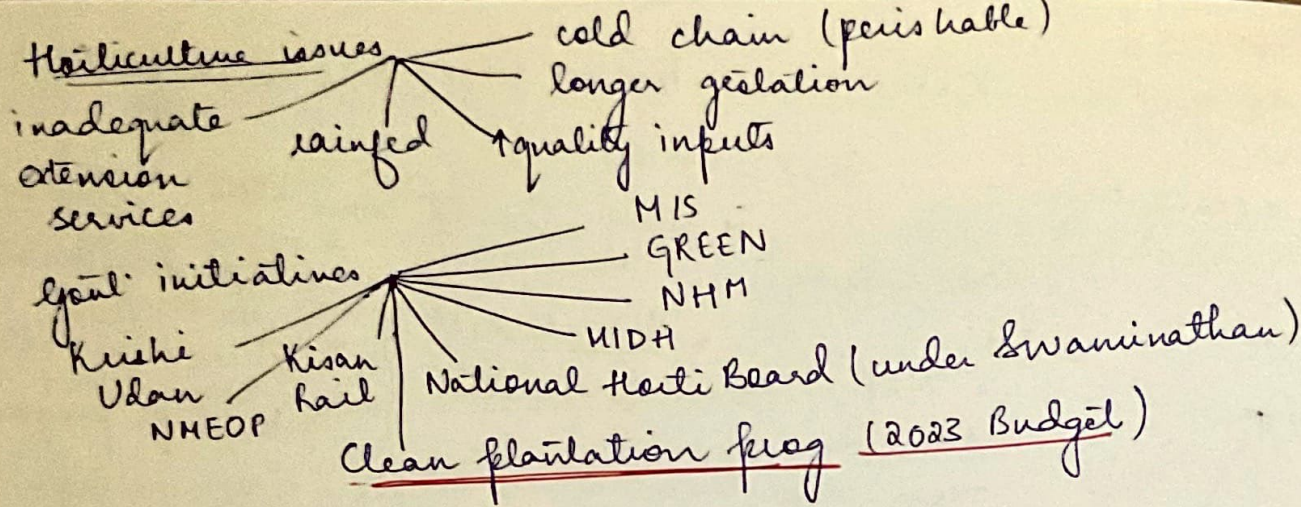


4As of food security

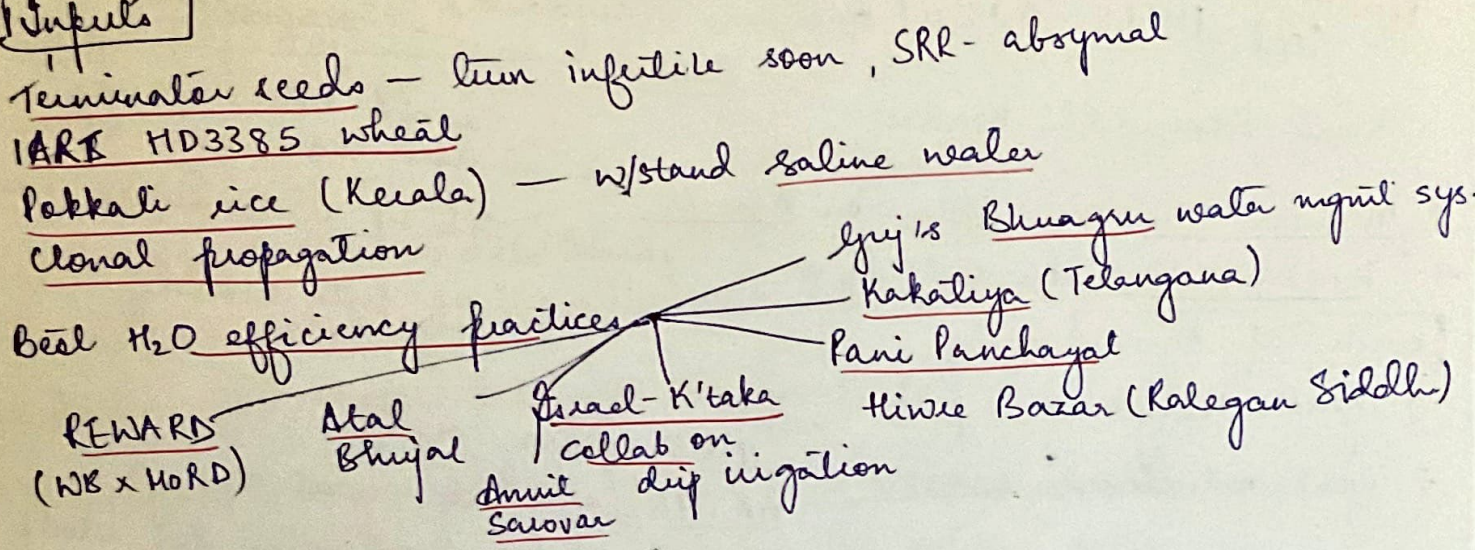


Food Processing SCM

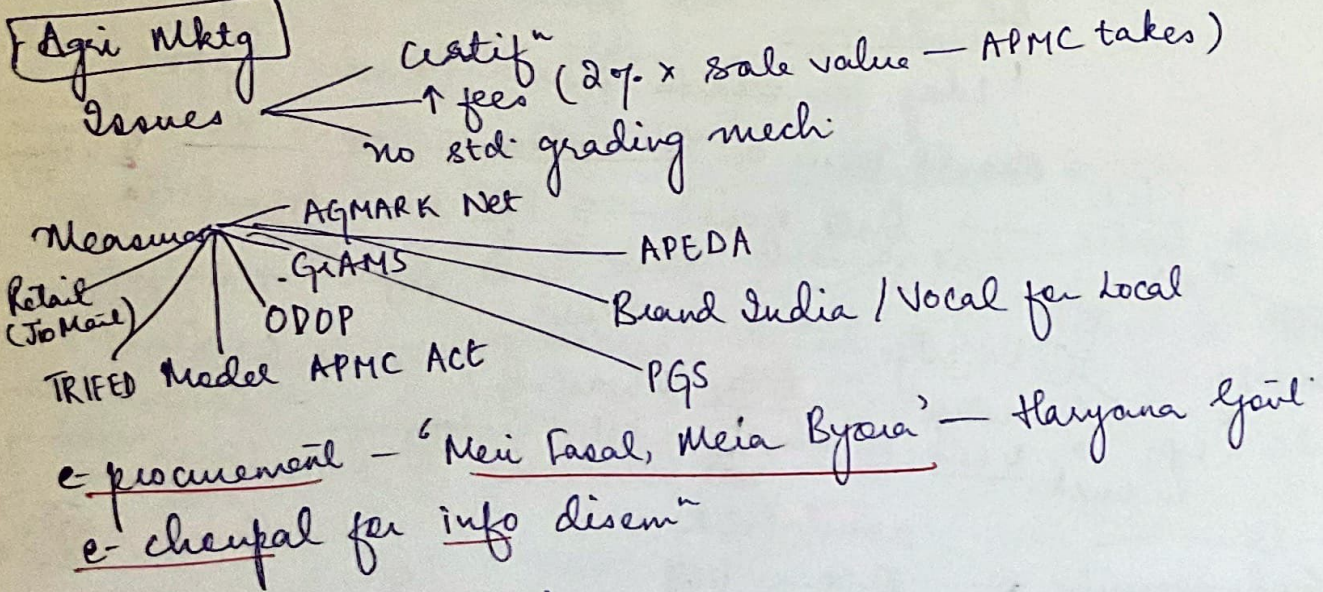




Inputs



Agri Mktg Issues



Dalhousie Comm - sug. area of agri mkt = 400 km²; Swamin (NCF) suggested = 80 km²

Conclⁿ for Industry: EAC's report 'Competitiveness Roadmap for India @ \$00' objective - achieve inc. status by 2047 we have to

adopt sectoral & region-specific policies based on 4 principles of growth i.e.

- Growth with which has
 - Social Progress
 - Shared
 - Sustainable
 - Solid (again attempt)

Infra

Use in last 7 yrs RE capacity ↑ 3x & Salor by 18x

1) Energy = India ← 3rd largest primary energy consumer
per capita consⁿ - only 1/3x global avg.

100%
 FDI,
 NSM,
 PLI,
 Solar
 Parks,
 Shishu
 (roof top)
 Kishu
 H,
 ISA

Total installed capacity = 420 GW

target^(⊕) = 500 GW
 180 (~40%) from non-fossil sources

⊕ 50% x this renewable
 240 (fossil)
 nuclear = 7GW

Salor = 65 GW
 wind = 40 GW
 large hydro = 47, small HEP = 5
 biomass = ~10 ; WTE = 0.5

Rank global = 4th in RE capacity

Challenges

80% energy from fossils
 AT&C losses (17%)

90K cr loss - NITI
 Ayog

fin^{*} health of State discoms bad - VDAY scheme
 taxes, subsidies - distorting (cross subsidization)

80% cost goes here
 * bad due to
 (⊕) &
 ↑ procurement cost of power theft

discontinuous power supply

(SAUBHAGYA) benefited 3cr HHs.

10% Eth blending (ahead of target) ∴ advancing of 20% target by 2025

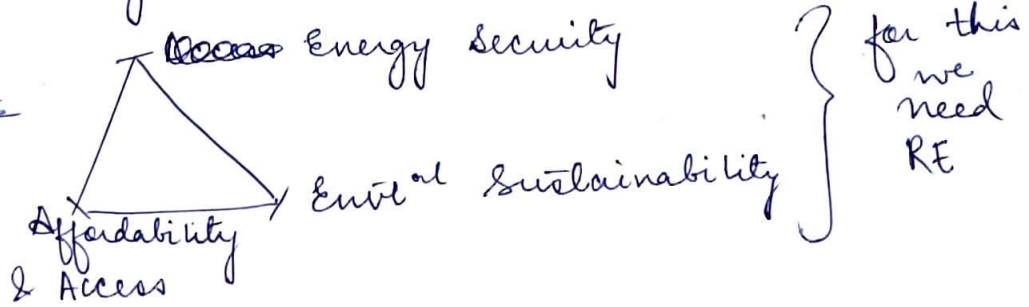
Achievement

Solar tariffs ↓ 3x in past 7 yrs.

WF ∴ → Kelkar committee - a unified energy ministry needed

- declog fin constraints
- smart grids (e-meters)
- hybrid models (PPP) → inter-state distⁿ RE → ↓ AT&C losses → RPO to single digit enforced
- ↑ priv players (delicensing power sector done in Electricity Amt. Bill)
- DBT mode in subsidy → IEX (power exchanges)

Energy trilemma



Potential Ans Str. for any RE Q (15 marks)

- Benefits to Govt
- " for Corporates
- " for Consumers - women, MSME, farmers
- " for Env't Economy

2) Roads India - 2nd largest road network; 1.52 km highway
2/3 rd of goods & 90% passengers transported by roads

2023 Budget - MORTH 25% ↑ in allocation

Significance → connectivity
 employment gen
 strategic mfg (logistics)

Issues → accidents (400 daily)
 road related death
 policy constraints
 fin
 infra

Brazilian declaration on road safety

Measures → NHGSY
 Gati Shakti
 Bharatmala Pariyojana
 NIP (1112 Cr.)
 18% funds - road

Env'tal → plastic waste
 steel/copper slag
 fly ash

3) Railways India - 3rd largest network

2023 Budget - highest ever capital outlay to Railway (2.42 Cr.)
 congested network (>100% utilisation) → ∴ ↓ speed

Issues → poor quality services
 poor turnaround time
 cross subsidization
 sub optimal freight share
 signalling issue
 animal conflict
 Optg. Ratio = 98% (to earn ₹100, spent ₹90)
 PRS data

Measures → KAVACH system (eliminates unattended level crossings) (Mission 0)
 electrification (100% by 2024)
 Kisan Rail (some stn on this model)
 DFC (70% freight trains running on normal routes will be shifted here)
 Mission Raftaar to 2x speed of freight trains
 inteqn of R.S with urban areas
 improve connectivity
 in spl.abled facilities
 line with local culture, heritage

Committees → Kakedkar on Safety
 Bibek Debroy (Rly modernisation)

Anti Collision Sys. Sam Pitroda } modernisation
70% accidents due to derailment

sec: need independent regulatory authority in India; privatisation

Millet 28% gr in prodⁿ - last 1 yr
nutriceals (carbs, fat, pro, dietary f.)
India - 20% x global prodⁿ > China > Nigeria

Top 5 - MP, Guj, K'taka, Raj, Mh.

+ ves - gluten free, treat, probiotic
ant[↑] abd gastric ulcer
t2 diabetes

-ve - ↓ yield, ↓ productivity, labourious processing
S, B, R - major ; 140M ceremony @ Rome by FAO

e-waste mgmt rules (2023)

+ 2 exemptions - Cad & Pb in Solar panels, cells, PV modules

Pb in med devices (except implantⁿ ls)
waste batteries

'22 rules excepⁿ -
radio active waste
Packaging plastics
micro enterprise

recycling target - 60% (2023 & 24) } will go on ↑.

Updated NDCs (5yr, UNFCCC secretariat, post 2020 PA)

- i) 50% - net
- ii) C sink (2.5-3bn tonnes)
- iii) LIFE mission
- iv) ↓ C intensity - 45% by 2030 (base - 2005)

Mission LIFE (1st yr - NITI then MoEFCC) (22-'27)

≥ 1 bn Indian, global youth
≥ 80% ill, ULBs — ef by 2028
75 pr under 7 areas

- healthy lifest.
- sust. agri
- energy
- water
- waste
- e- "
- SUP

COP 27 ← Korinivira jt. work on Agri
ET-LEDS (net 0 by 2070, 7 ↓ C dev't path.)

India - 1/3 × global avg (per cap. emission)
& < 4% × cumulat. emission

1. energy
2. mobility
3. industrial sys
4. CCS
5. FC
6. building & fin.

National Green H₂ mission

- ↓ FP imports worth ₹ 1 L Cr.
- H = 2.5 × energy / tonne comp. 2 Natural Gas
- Prodⁿ capacity aim - 5 MMT of GH by 2030
- 60-100 GW electrolyser installⁿ.
- 125 GW RE for GH prodⁿ
- 50 MMT of C abatement cumulatively