K.K. Wagh Education Society's
K.K. Wagh Institute Of Engineering Education & Research
Approved by AICTE New Delhi, Affiliated to University of Pune

A
SEMINAR
On

'Lateral Move Irrigation System '

Mechanical Engineering Department

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INTRODUCTION

PUT TWO IMAGES SIDE BY SIDE AND TALK ABOUT

Traditional vs Modern agriculture

NEED OF AUTOMATION

Pros

4-5 bullet points

Cons

2-3 bullet points

Possible Phasses/Stages

Stages	Status of Automation (India mdhe)
Land ready karne in summer	Partially Exists
Biya lawne	Partially Exists
Irrigation + Pesticide + Some Fertilizer	No Automation
Harvesting	Decent Level of Automation
Ajun kahi ?	???

Current Irrigation Methods

Traditional Methods : CONS of each method lihi/bol

devacha paani

naali wali method > from wihir /bore well

drip

sprinkle

some fertilizers and pesticides also passed through this methods

Proposed Automation in Irrigation

Lateral move / also called as linear irrigation system > kuthe use kartat India chya baher

PUT SOME IMAGES

Center-pivot irrigation / also called water-wheel and circle irrigation

PUT SOME IMAGES

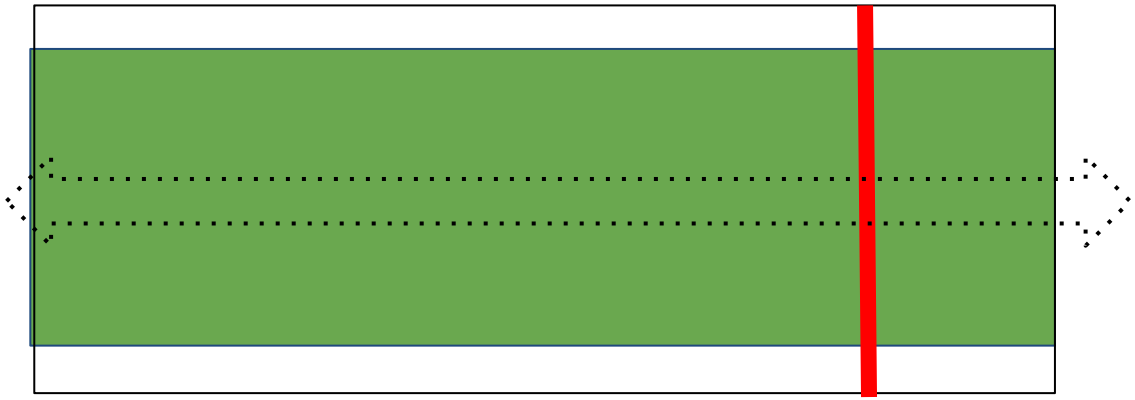
why not Centre pivot irrigiation? > used in US > but circular farms hardly exist in India and circle in a square wastes a lot of land

land waste= 0.215 m2 * (area of square) . . . assuming a square field

Lateral Move Irrigation

PUT A TOP VIEW SKETCH /ANIMATION and or SIDE view if you want

something like this:



green is our shet, red is the lateral move irrigation system , black dotted arrow is the direction of movement

Lateral Move Irrigation

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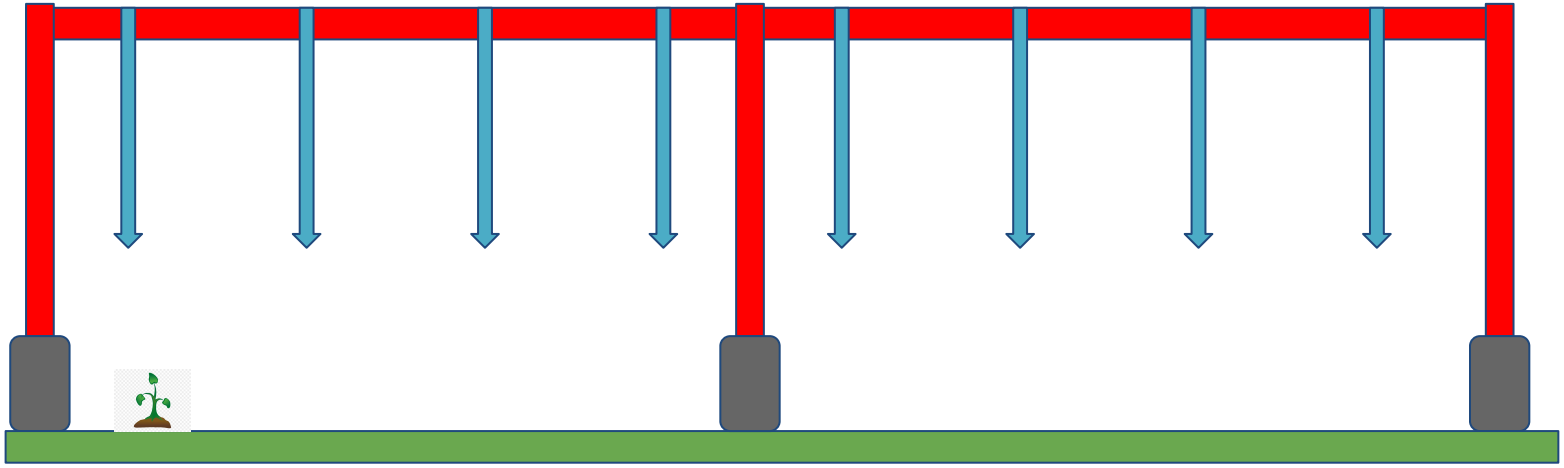

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Engineering Considerations (EACH ON 1 slide?)

Essential components of the irrigation system:

1. Wheels > dimension (market mdhe available?)
2. Motors / Propulsion? something like tractor? or electricity?
3. Power requirement - kWatt-hr or kahitari units mdhe jyane operation cost milen.
4. Supports for length of the beam/pipe across the width of field
5. Sketch of beam across the width of farm/field (beam with uniform load cha picture aatahvtay?)
6. Calculation of time and water required for per unit area of farm possible?
7. Modular design > parts assemble karun disassemble karta aale pahije asa design

Practical Considerations (EACH ON 1 slide?)

1. Costs calculate karaycha per unit area (attention: unit area aapan m2 use karu shakto aani mg last la acres mdhe convert karu shakto karan shetkari per acres mdhech hishob kartat)
2. multiple uses possible? irrigation/paani takne + pesticide fawarne + fertilizer zadanchya roots wr takne + survey for checking ki zada sarw thik aahet ki nahi/kahi kide/fungal/microbial infection zala ka?
3. Modular design jar asel tr ekch irrigation system khupp farms mdhe use karta yeil ka prtyek veles assemble aani sissable karun? tula kay wattay? so that community farming promote karta yeil aani ek shetkaryala sarw kharch nahi karawa lagnar
4. water supply from fixed source/ from a moving truck? (aaplya

Commercial Viability

1. All major patents on such irrigations are possessed from organizations/individuals outside India (True/False? > verfiy kar google patents wr)
2. Lookout for greening of patents / file a new patent with proposed modular design
3. Gather seed funds for a startup or sell patent to exisiting irrigiation giants like Jain Irrigation
4. try to get sponsorship and make an actual working prototype in Final Year project (?)

Future

Same lateral move irrigation can be used for vertical farming and all care-taking for Hydroponics

REFERENCES

THANK YOU !