

# A REVIEW OF DRIVERS AND CONSTRAINTS OF SAWAH TECHNOLOGY ADOPTION AMONG FARMERS IN NIGERIA

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# INTRODUCTION

- To achieve self-sufficiency in rice production in Nigeria, given the limited possibility for expansion of cultivable area and increase in population, there is need for a Green Revolution (GR) (Diao et al. 2008; Otsuka and Kijima 2010).
- GR enhances crop yield per unit of land by using high-yielding varieties (HYVs), irrigation and agrochemicals such as fertilizers, pesticides and herbicides.
- Wakatsuki (2008) noted that to realize green revolution in Sub-Saharan Africa, it is essential to improve rice-growing environment by promoting lowland sawah system.

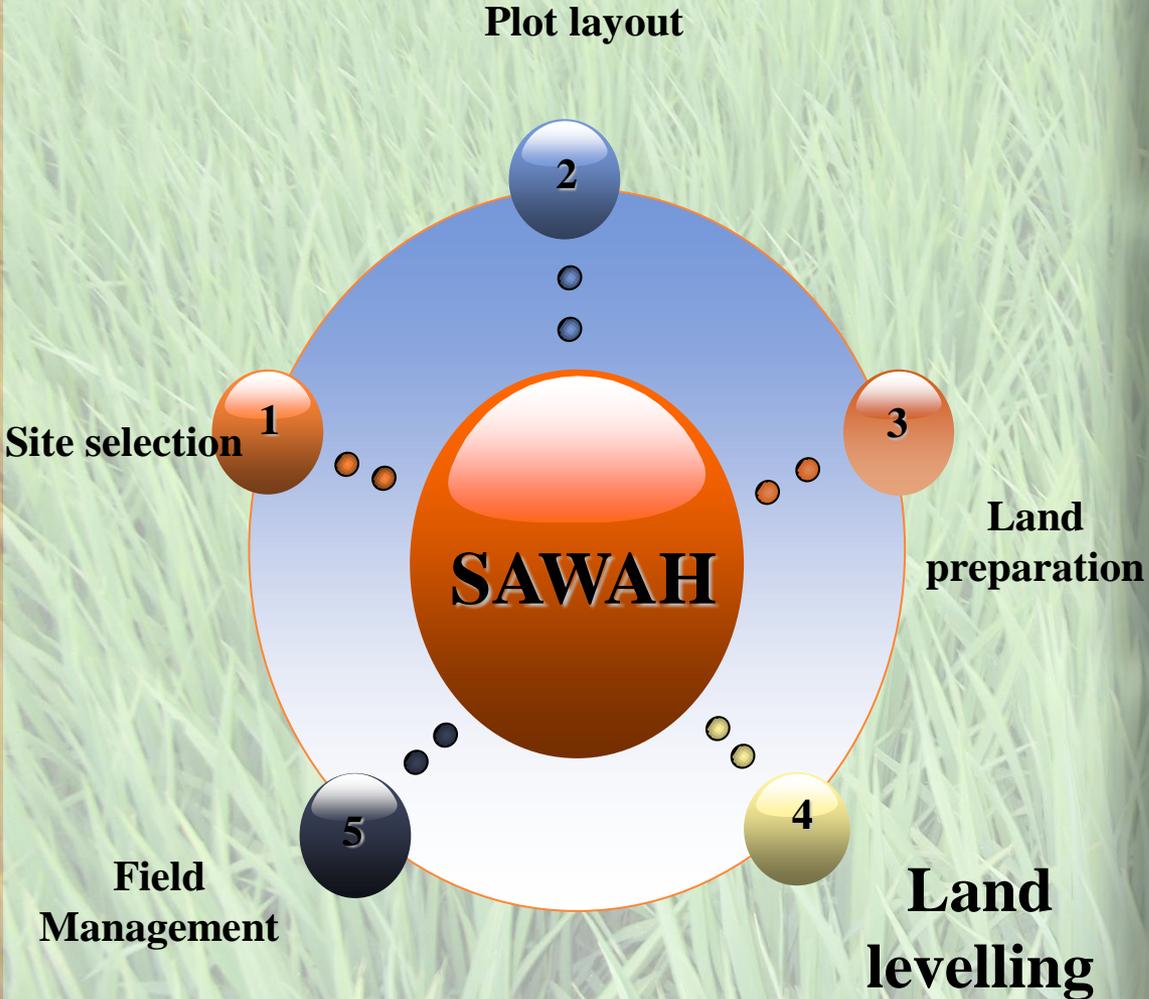


# SAWAH

- “**SAWAH**” refers to man-made improved rice fields with demarcated, leveled, bunded and puddled rice fields with water inlet and water outlet for irrigation and drainage.
- The basic elements of sawah system include
  - ❖ improved irrigated rice basins,
  - ❖ seedbed preparation,
  - ❖ transplanting and spacing of seedlings,
  - ❖ fertilizer application and
  - ❖ most importantly, appropriate water management.



# BASIC ELEMENTS OF SAWAH DEVELOPMENT



# SAWAH DEVELOPMENT IN NIGERIA

- In Nigeria, the sawah system was introduced through on-farm adaptive research in the two research sites of Gara and Gadza inland valleys, located in Bida, Nigeria in 1986 (Hirose and Wakatsuki, 2002).
- On-farm adaptive research and participatory trials on Sawah system research were conducted on the research sites for four years (1986–1990) by Japanese researchers.
- The dissemination of the sawah technology took off in 2001 from villages previously identified in a diagnostic survey (Oladele and Wakatsuki, 2010).





**Sawah Development at Shabamaliki village, Bida, Nigeria.**



**Sawah Development at Shabamaliki village, Bida, Nigeria.**

# JUSTIFICATION

- To achieve self sufficiency in rice production through GR, sawah technology should be disseminated to other farmers across all regions in Nigeria where it has not been adopted at present.
- There is therefore a need to review the drivers and constraints to the adoption of sawah technology in Nigeria.
- in disseminating sawah technology, policy makers must bear the major findings of this paper in mind to enhance effective adoption.

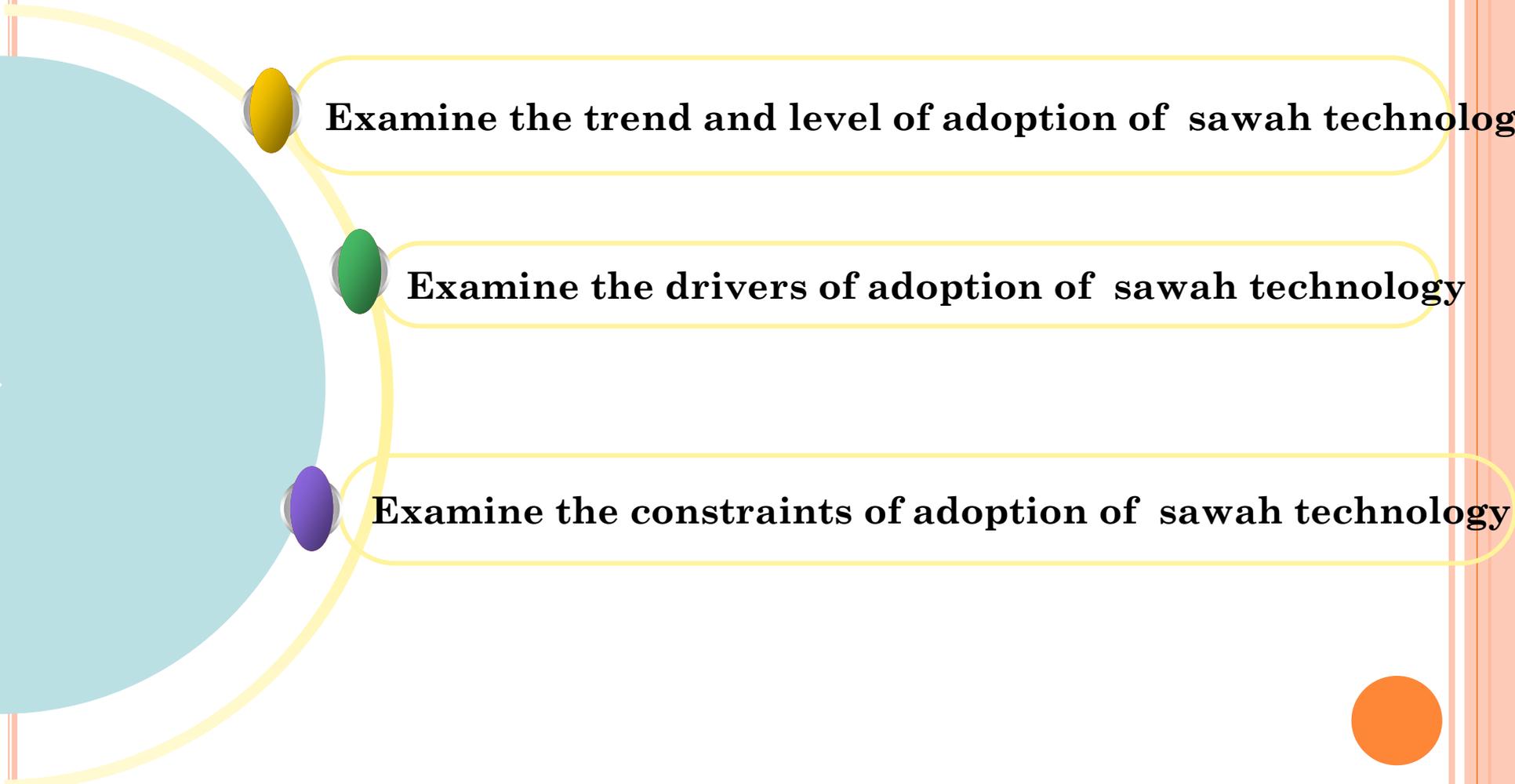


# GENERAL OBJECTIVE

- This study examined the drivers and constraints of Sawah Technology Adoption among Farmers in Nigeria.



# SPECIFIC OBJECTIVES



**Examine the trend and level of adoption of sawah technology**

**Examine the drivers of adoption of sawah technology**

**Examine the constraints of adoption of sawah technology**



# LEVEL AND TREND OF ADOPTION OF SAWAH

Table 1: Trend of Adoption of Sawah Technology

Year	Number of farmers	Average yield(t/h)	Field size (ha)
2001	3	4.50	3
2002	5	5.00	5
2003	10	5.10	10
2004	30	5.00	30
2005	100	5.20	50
2006	200	5.10	100
2007	350	5.10	110
2008	500	5.00	150
2009	1000	5.20	200

Source: Oladele and Wakatsuki, (2010)

# DRIVERS OF ADOPTION OF SAWAH TECHNOLOGY

Table 2: Reasons for the adoption of sawah technology rice production

Reasons	Percentage
High yield	100.00
Ease of disease management	72.50
Ease of pest management	70.00
Fertilizer management	75.00
Weed control	76.20
Water management	87.50
Land preparation	68.80
Good tillering	90.00

Source: Alarima et al. (2011a)

High yield motivates farmers to Adopt sawah technology



# CONSTRAINTS TO SAWAH TECHNOLOGY ADOPTION

- The constraints identified include:
  - ❖ Constraints related to land acquisition and tenure
  - ❖ Economic constraints
  - ❖ Technical and mechanical constraints
  - ❖ Information and training constraints and
  - ❖ Soil fertility





Lack of adequate skill of power tiller operation



Power tiller sunk: operations need good skills



This is a sawah field

Pillars brought by Land owner for selling of land used for sawah by a farmer who rented the land

Land Tenure as a problem faced by farmers



Farmers' improvised bridge to solve transportation problems

# CONCLUSION

- Increased yield, weed control ability, disease and pest management attribute, effective water management, fertilizer management efficiency, land preparation and good tillering were identified as the major drivers of adoption of sawah technology.
  - The study also identified land acquisition and tenure, economic, information, communication and training, technical and mechanical constraints and soil fertility as the major constraints to adoption of sawah technology.
  - In disseminating sawah technology to other areas where the technology has not been adopted, these motivating factors must be considered.
  - Also effort must be made to address these constraints identified in this study.
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*THANKS FOR  
LISTENING*