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# STREAM FLOW CHANGES AND ITS IMPLICATIONS ON IRRIGATION INFRASTRUCTURE IN AGRARIAN COMMUNITIES OF NIGERIA



Fig 1: STREAM FLOW CHANGES

## BACKGROUND

- Climate change, a global environmental challenge is altering the climate system, and a threat to socio-economic development.
- Changes in average weather conditions, alongside unpredictable temperature and rainfall patterns resulting to floods and droughts on two different ends of an extreme.
- These changes are increasingly affecting the availability of water for irrigation purposes and having impacts on irrigation infrastructure.
- This can have future implications on agricultural production, food security and poverty levels if left unchecked.

## AIM AND OBJECTIVES

The aim of this study is to assess the impacts of streamflow changes on irrigation infrastructures.

The Objectives are:

- Assess stream flow changes and its impacts on irrigation infrastructures
- Map out how different types of irrigation infrastructures respond to changes in stream flow.

## METHODOLOGY

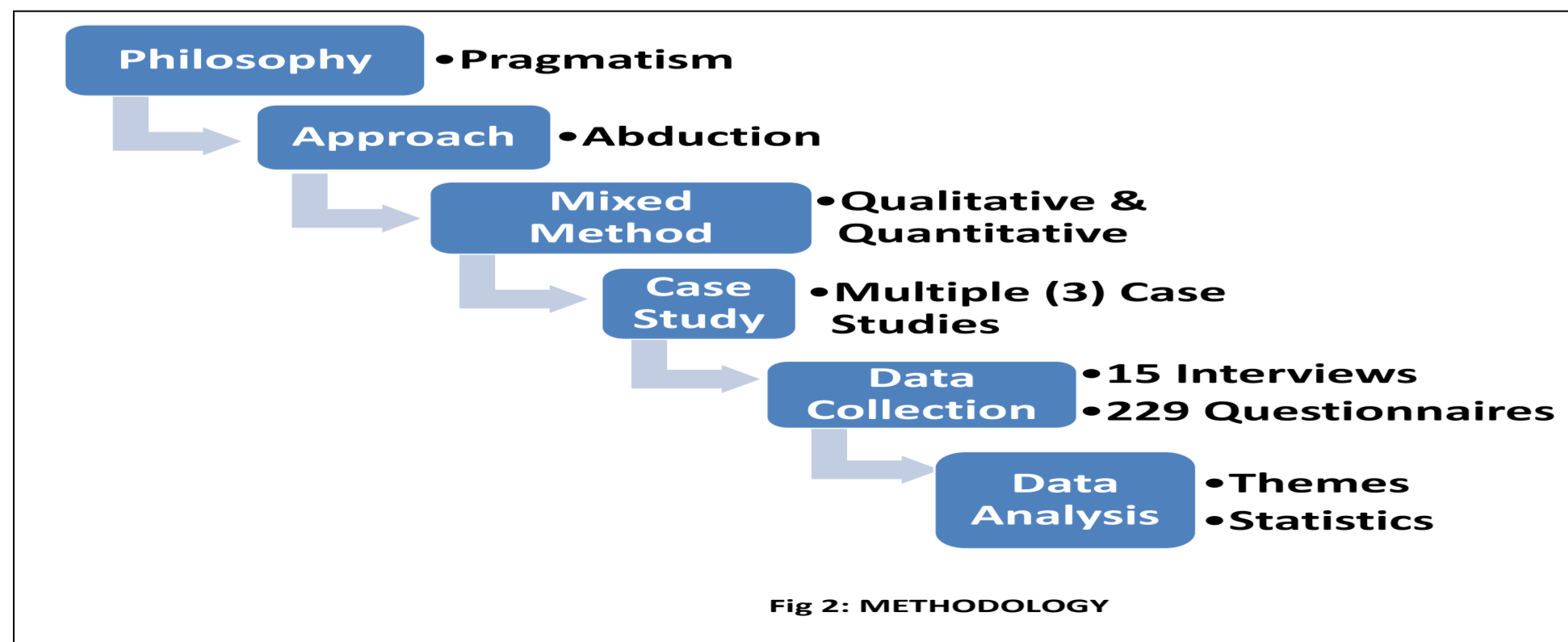


Fig 2: METHODOLOGY

The three (3) case study communities are Riyom, Mangu and Shendam LGAs (refer to fig 3).

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## CASE STUDY COMMUNITIES

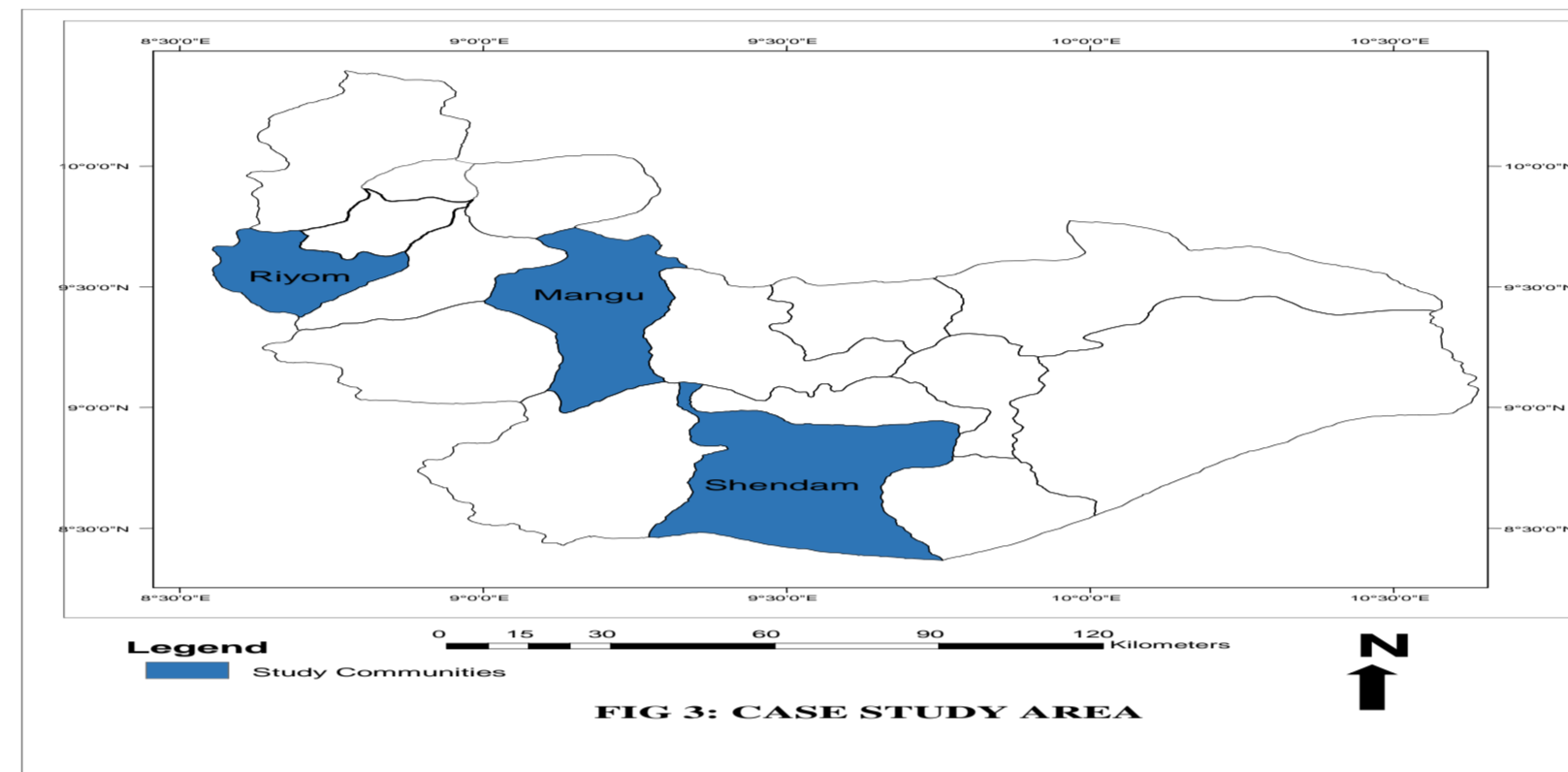


FIG 3: CASE STUDY AREA

- Types of irrigation infrastructure available in each case study were identified (refer to fig 4).
- An assessment of the stream flow during both the dry and rainy season was carried out to understand the pattern of stream discharge. (refer to fig 5 & 6).
- Irrigation infrastructures sensitive to stream flow changes in each case study community are presented (refer to fig 7).

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Fig 4: WATER FOR IRRIGATION

## RESULTS AND CONCLUSION

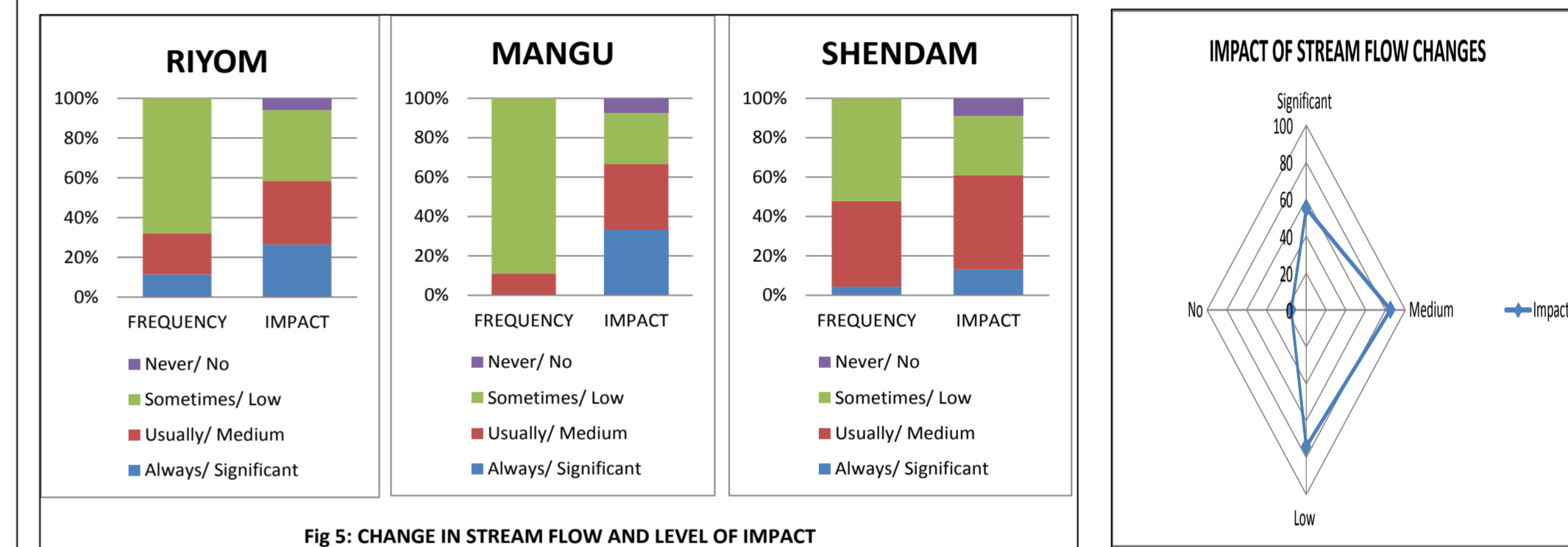


Fig 5: CHANGE IN STREAM FLOW AND LEVEL OF IMPACT

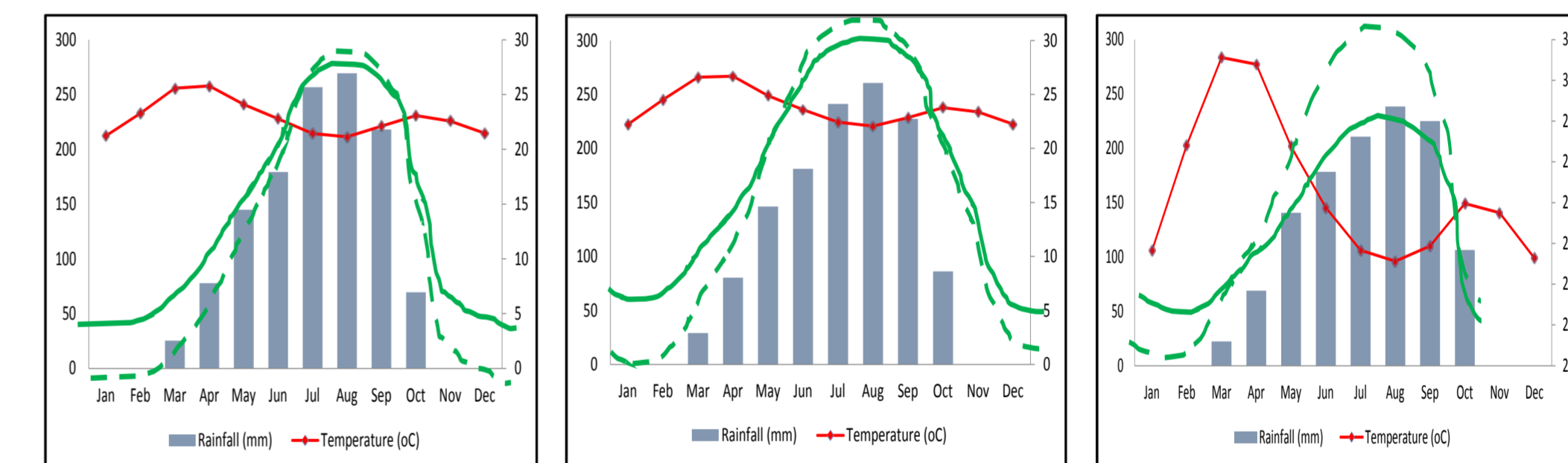


FIG 6: STREAM FLOW CHANGES

Erratic and heavier rains are increasing stream flows in rainy seasons affecting irrigation infrastructures (earth dams and wash bores) in flood prone areas, while drier periods and water shortages are causing decreased stream flows in the dry seasons thereby affecting the yield of irrigation infrastructures (boreholes, wells) due to lower water levels.

