

System of Rice Intensification (SRI)

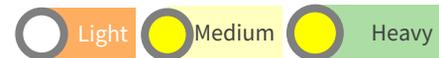
System of Rice Intensification (SRI) is an agro-ecological practice for increasing the productivity of irrigated rice cultivation by changing the management of water, plants, soil and nutrients. SRI promotes the growth of root systems, increases the abundance and diversity of soil organisms by keeping the soil moist but not flooded, and provides frequent aeration and conditioning of soil with organic matter. This agro-ecological practice stimulates plant growth by transplanting young seedlings, avoiding disturbance to roots and providing crops with wider spacing to encourage greater root and canopy growth. The agricultural methodology is based on well-founded agro-ecological principles which have been successfully adapted to upland rice and have shown increased productivity over current conventional planting practices.

MOST SUITABLE AGRO-ECOLOGICAL CONDITIONS

Value chain



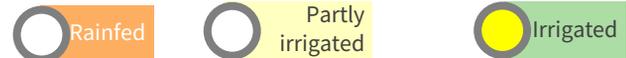
Soil texture



Climatic zone



Water source



Annual average rainfall (mm)



Topography



MOST APPROPRIATE CONDITIONS AND REQUIRED INPUTS

Farming system

Does it require collective action



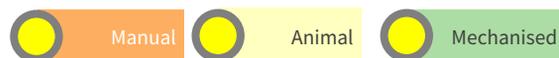
Characteristics



Farm size (ha)

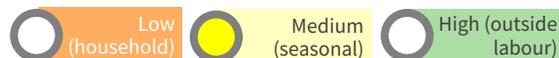


Mechanisation



Human resources

Labour intensity – level of effort



Gender/youth smart (low investment/low labour requirements)



Financial resources

Initial investment



Maintenance Costs



Access to finance capital or credit required



Enabling Environment

Extension support



Access to inputs



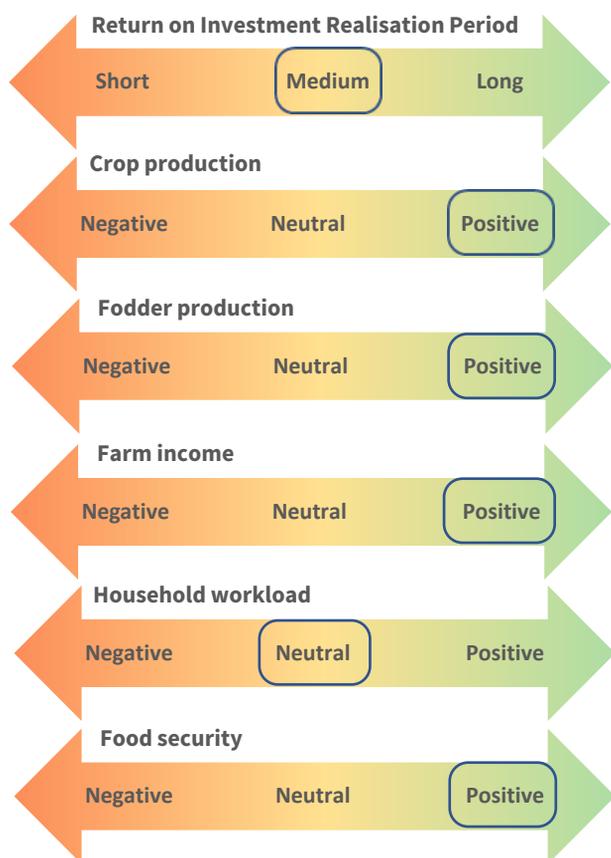
Market access



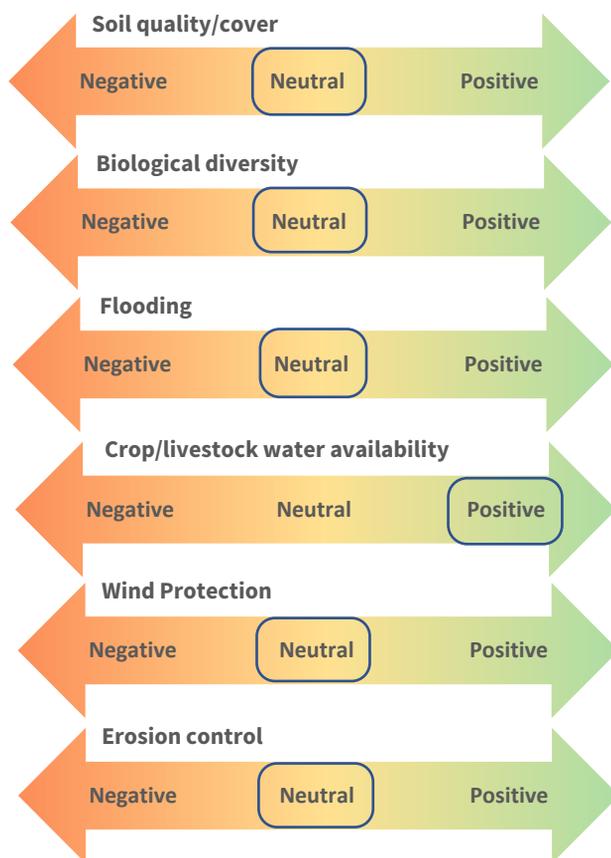
The purpose of this technical brief is to guide where this **practice, technology or strategy** could be applied. It may be applicable in other circumstances, but this brief focuses on where it is possibly **most suitable**. Content is general, and should be contextualised depending upon locality. The brief provides an overview, details of appropriate agroecological characteristics, appropriate conditions and inputs, possible outcomes and impacts, how the **practice, technology or strategy** should be applied, potential benefits and drawbacks, and provides suggestions for further reading in terms of CCARDESA materials and other sources, including those used to develop this technical brief.

POSSIBLE IMPACT/OUTCOMES

Socio-Economic Impacts Positive or Negative



Ecological Impacts Positive or Negative



These descriptors indicate whether the practice, technology or strategy has a positive, neutral, or negative impact or outcome. Those with no box are deemed not-applicable.

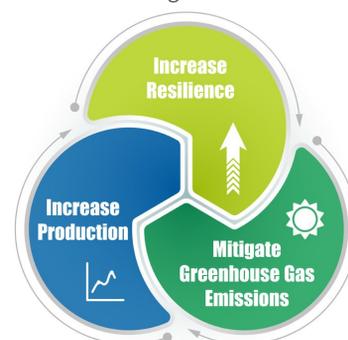
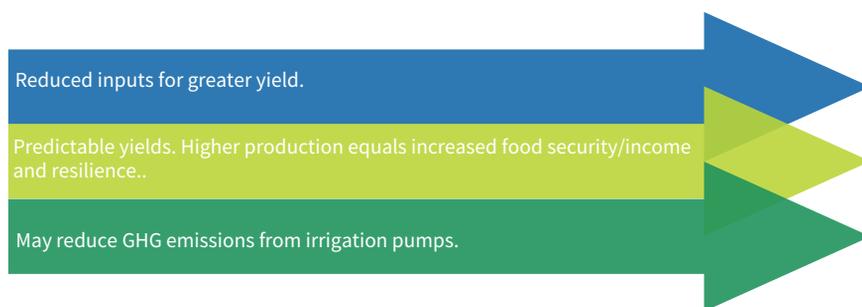
TECHNICAL APPLICATION

To effectively implement SRI practices:

- **Step 1:** Consider separation of high-quality seeds from low-quality seeds through soaking them in plain or salt water and the unviable seeds will float on the surface of the water.
- **Step 2:** Plant the seeds on an unflooded, raised bed with adequate drainage and fertile soil.
- **Step 3:** After 8-12 days, transplant single young seedlings into a grid pattern with wide spacing between hills (25 cm x 25 cm).
- **Step 4:** During crop growth period, control the flooding and research and follow alternate wetting and drying irrigation practices.
- **Step 5:** Consider application of compost and mineral fertiliser for nutrient enhancement.
- **Step 6:** Use a mechanical weeder for the control of weeds and maximisation of soil aeration.

CLIMATE SMART AGRICULTURE OUTCOME(S)

Reflecting how this **practice, technology or strategy** contributes to Climate Smart Agriculture outcomes



SUMMARY/KEY ISSUES

Benefits

- Increased and diversified crop yield resulting in increased farm income
- Improved food security
- SRI reduces GHG emissions
- Existing water availability patterns to accommodate the irrigation schedule.

Drawbacks

- SRI is a labour-intensive agricultural practice.
- Occurrence of methane emissions from rice fields caused by flooding.

REFERENCE MATERIAL

CCARDESA Related Content

- CCARDESA, 2019. Technical Brief 11, Climate Smart Water Management Options for Rice.

Additional Information

- Global Alliance for Climate-Smart Agriculture (GACSA), 2016. [The System of Rice Intensification \(SRI\): Revisiting Agronomy for a Changing Climate.](#)
- Food and Agriculture Organisation (FAO), 2013. [System of Rice Intensification \(SRI\)](#). Rome, Italy.