
Case study on directionalities, STI policy and SDGs in Norland

Norland has a population of 25 million and a per capita GDP of \$2,500. It is landlocked and borders with 4 countries with whom it has friendly relations and open trade. Its main export is ceramatite, which accounts for 50% of foreign earnings. Energy, while not abundant, is sufficient but under threat from climate change as it is mostly hydro. Soil erosion and drought are serious threats.

Firms and farms are mostly privately owned with very few parastatals (telecom, energy grid). 60% of the population lives in rural underdeveloped areas and earns two-thirds of their livelihood in the informal sector (1 million family farms) mostly in agriculture where unpaid labor is mostly done by women. The capital has experienced fast urban and infrastructure development in the last 15 years, attracting young jobseekers.

Many traditional crops (millet and sorghum) have undergone a decline in planting and consumption in favor of maize which has become the dominant source of calories. More than 15% of children under 5 years old manifest stunted growth, while 25% are obese.

The national development plan for the period highlights the need for effective policies for agriculture. Current agricultural policy focuses on subsidies for seed and fertilizer as its main policy tool. Subsidies are provided by compensating distributors of seed and fertilizer (mostly private sector merchants) above the subsidized price, up to market price, by the Ministry of Agriculture (MoA).

MoA has occasionally banned maize exports and imported maize and fertilizer, commercially or through aid programs. Farmers mill their crop at millers who are also private sector operators. Farmers buy maize flour from the same millers for their own consumption. During periods of low yields, the Ministry provides millers with maize to mitigate famine. When harvests underperform, farmers will commit future harvests to purchase maize flour.

The Ministry of Science and Technology (MoST) and its STI policy focus on designing R&D programs at two national universities and runs an independent research grant program. STI policy touches on agriculture as a sector but MoST does not have partnership activities with MoA or ARIN¹. ARIN reports to MoA and is fully funded by MoA, aside from several projects with international development partners. ARIN staff numbers have been decreasing (currently 85 researchers) since structural adjustment and austerity programs in the mid-2000s were imposed during a debt crisis. ARIN research is focused on challenges in the informal sector and has little contact with large estates and agri-industry (1,000 farms and firms).

All 500 agricultural extension workers are employed by ARIN, with modest resources in terms of equipment, transport, and agrochemicals. Private sector extension is non-existent except for several startups endeavoring to do digital extension using AI powered apps for diagnostics. They generate income from commissions charged to suppliers of pesticides, fertilizers, tools and seeds, as remedies following on established diagnosis.

Question for discussion:

1. What are the most relevant SDGs that can help re-frame the policy objectives for agriculture?
2. What are the key challenges and societal objectives for Norland and how do these relate to the focus of current STI and agriculture policies; who is the target constituency and does this require change?
3. What are some relevant technologies that could be deployed?
4. What could be key medium and long-term policy recommendations for MoST, ARIN and MoA?
5. Provide three questions for each organization (MoST, MoA and ARIN) that you would ask during an interview to collect insight for revising the national STI policy.

¹ Agriculture Research Institute of Norland