IFAD

Enabling poor rural people to overcome poverty

Food and Energy Security: How poor people can benefit

66th General Assembly of the UN

New York, 02 November 2011

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I. AS AN INSTITUTION EMPHASIZING FOOD SECURITY, WHY IS IFAD INTERESTED IN BIOENERGY?

BECAUSE IT CAN REDUCE POVERTY, AND ENHANCE FOOD SECURITY!

International Fund for Agricultural Development

- Established in 1977
- An IFI and a unique partnership of Member States from OECD, OPEC and developing countries
- Goal: to empower poor rural women and men in developing countries to achieve higher incomes and improved food security
- To date supported more than 860 programmes and projects in 117 countries and territories
- Mobilized close to US$19.6 billion in cofinancing and funding from domestic sources for rural development, in addition to IFAD's own contribution of almost US$12 billion in loans and grants

IFAD strategy on biofuels

- Round Table discussion in the GC 2008:
  - "Participation in biofuels has to be pro-poor, pro-nature, pro-livelihoods and pro-women, while ensuring food security"
- **Integrated food and biofuel systems** to enhance food security
- **For areas where food cannot be easily grown: biofuel production**
- Energy is:
  - An essential input to more cost-effective production systems
  - Central to improving chain efficiency and reducing post-harvest losses
  - A source of income for the poor as agricultural producers and employees

The critical issue of poverty alleviation

- For every five people in the world, one is employed in agriculture (1.3 billion out of 6.8 billion)
- How much can five people consume (food, feed, fibre) to give the agricultural labourer a meaningful income ?
- Can these people move out of agriculture ?
- Even if half of them were enabled to move out of agriculture, they could not be absorbed into other sectors in their countries:
  - Even the large economies cannot absorb that many. US and EU`s total labour force amounts to approximately 380 million people. And they have unemployment rates in excess of 9%
- Agriculture (food, feed, fibre) is too small to sustain 1.3 billion
- Need to look for alternatives that can enhance smallholder incomes
- Biofuel production provides one such opportunity as it caters to a large market

The impact on employment

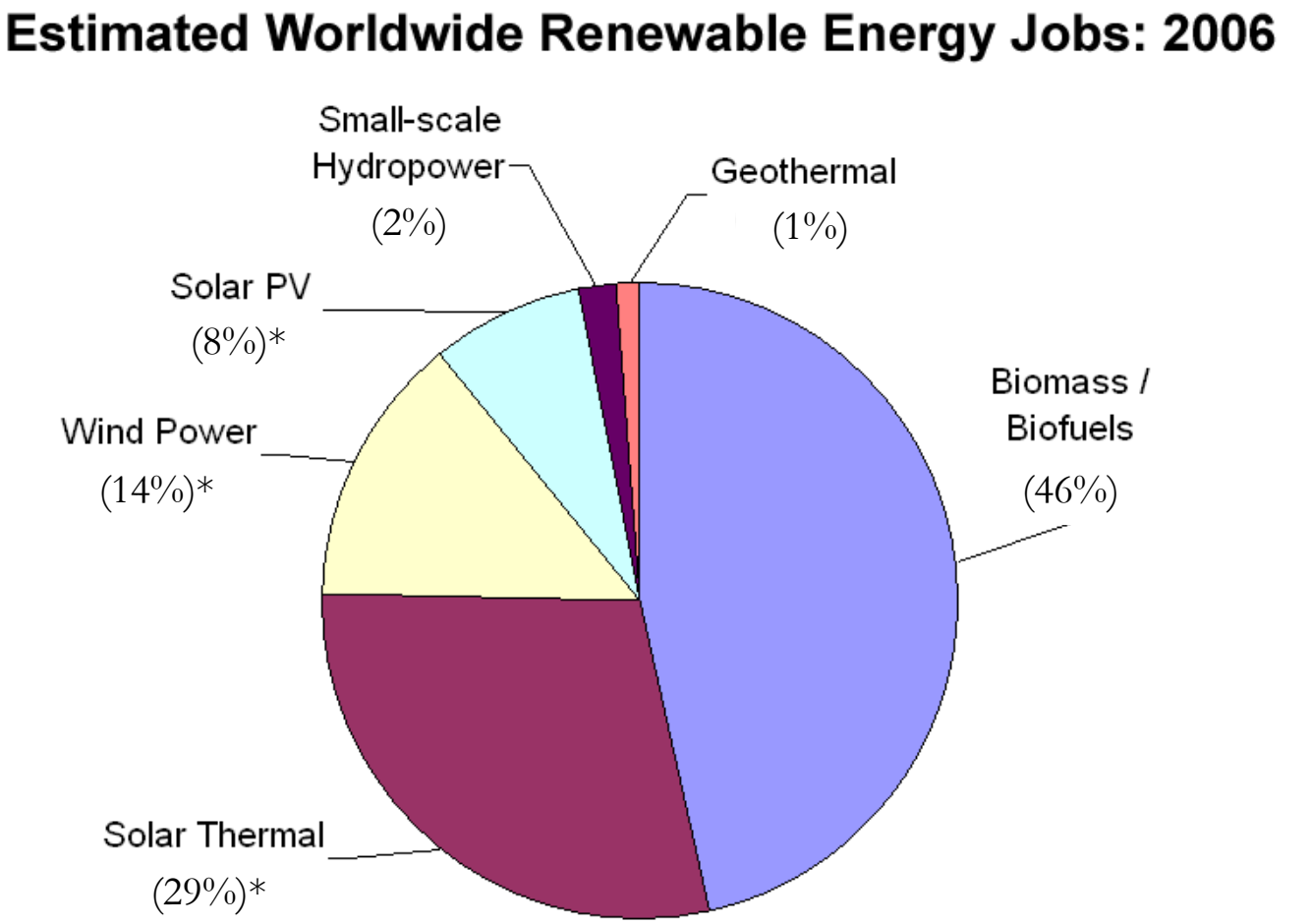


Chart: Green Collar Blog | Data Source: Jobs in Renewable Energy Expanding (Worldwatch Institute, 2008)
Includes employment directly in renewables or indirectly in supplier industries.

* Mostly in manufacturing countries

The impact on employment … (cont'd)

The Brazilian sugarcane industry:

- 982,000 workers directly and formally employed in sugar-alcohol production
- 4.1 million jobs dependent on the sugarcane agroindustry (estimate in 2005)
- Second highest average salaries paid in Brazilian agriculture (#1 Soybean)
- Reduction in child labour from 25% of sugarcane cutters, in 1993, to 0.9% in 2004

Source: FAO et al. (2008)

Benefits for smallholders

- Enhance food security with integrated food and energy production systems
- Generate income for poor as producers and as employees
- Approach critical in fragile agro-ecological conditions where food production is insufficient or unviable
- Opening new markets
- Multiple-use crops (food, animal feed and biofuel)
- Soil improvement and short growing seasons, benefiting rotations with food crops
- Improved health with cleaner fuel
- Local energy supply – increasing living conditions, food production and processing
- Improve chain efficiency
- Electricity in rural areas can attract youth to agriculture

II. THE FOOD VS. FUEL DEBATE

Food vs. fuel: the debate

- Widespread perception: biofuels leading to higher food prices
- Blending targets and governmental subsidies in the west to produce cereal-based feedstock contributed to the problem
- Is it appropriate to blame the product rather than the policies ?

Food security: A noble idea, but there are challenges

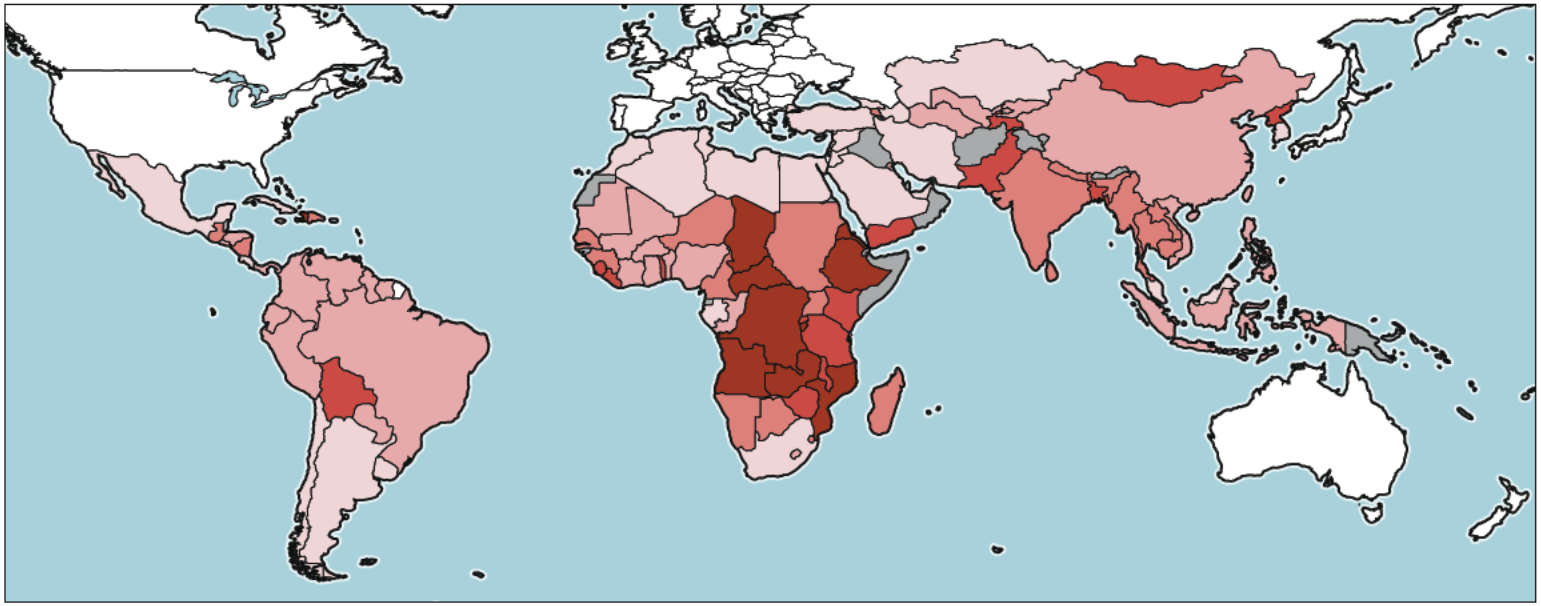
- Uncertain definition. Is food security about ensuring that one can:
  - Physically grow food to meet family requirements ?

    or
  - Have the adequate income to buy this food ?
- Food security can contribute to increased poverty for small farmers if appropriate farm gate prices are not paid for growing politically sensitive crops (cereal-based)
- In development, food security has been pursued for a long time. Yet undernourishment and poverty figures remain high

Food security:
A noble idea, but there are challenges

FAO Hunger Map 2010

Prevalence of undernourishment in developing countries



Source: FAOSTAT 2010 (www.fao.org/hunger)

Note: The map shows the prevalence of undernourishment in the total population of developing countries as of 2005-7 – the most recent period for which complete data are available. Undernourishment exists when caloric intake is below the minimum dietary energy requirement (MDER). The MDER is the amount of energy needed for light activity and a minimum acceptable weight for attained height, and it varies by country and from year to year depending on the gender and age structure of the population.

The designations employed and the presentation of material in the map do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of frontiers.

Prevalence of undernourishment in developing countries (2005-07)

- Very high (undernourishment 35% and above)
- High (undernourishment 25-34%)
- Moderately high (undernourishment 15-24%)
- Moderately low (undernourishment 5-14%)
- Very low (undernourishment below 5%)
- Missing or insufficient data

www.fao.org

Key questions

- How does development address poverty by keeping farm-gate prices low ?
- How does one ensure physical food security in areas where food production is uneconomical ?
- Should smallholder production of low value food crops be encouraged knowing the lands will be sub-divided in the next generation ?
- Or is diversification into higher value crops the right approach to be followed to benefit smallholders with shrinking land resources ?
- As noted earlier, despite well-intentioned efforts over the last 50 years, malnutrition remains a pressing issue
- Has the time come to re-think the approach ?

III. THERE ARE ALTERNATIVES, INCLUDING BIOFUELS

IFAD: interest in various renewable energy sources

- Solar, wind, hydroelectric
- Biogas from agricultural and animal waste
- Bioethanol and biodiesel from alternative (non-food or multiple-use) water-efficient biofuel crops that can be grown in:
  - Fragile agro-ecological zones
  - Marginal lands
  - Saline soils
  - Dry areas
- Each is relevant, but there are different implications for poverty alleviation in developing countries

Integrated food and biofuel production system: Biogas from livestock waste

Experiences of two different IFAD projects in China

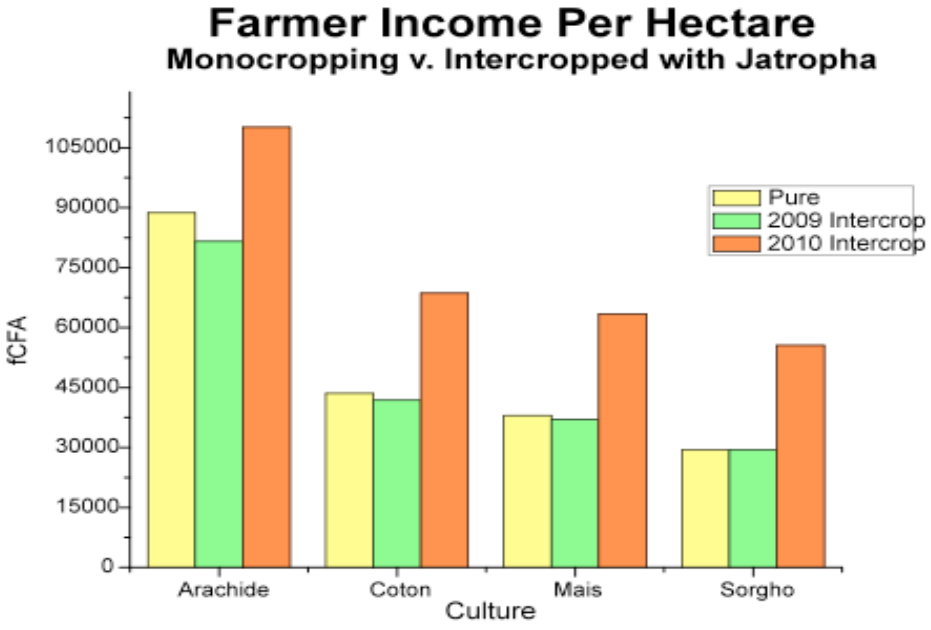
Gansu (2006-2012):

- More than 260,000 farmers benefited (56% women), in 840 villages
- By using slurry as fertilizer, 73% farmer households increased grain production by 10 to 30%
- Chronic and acute child malnutrition decreased by more than 50%

Guangxi (2002-2008):

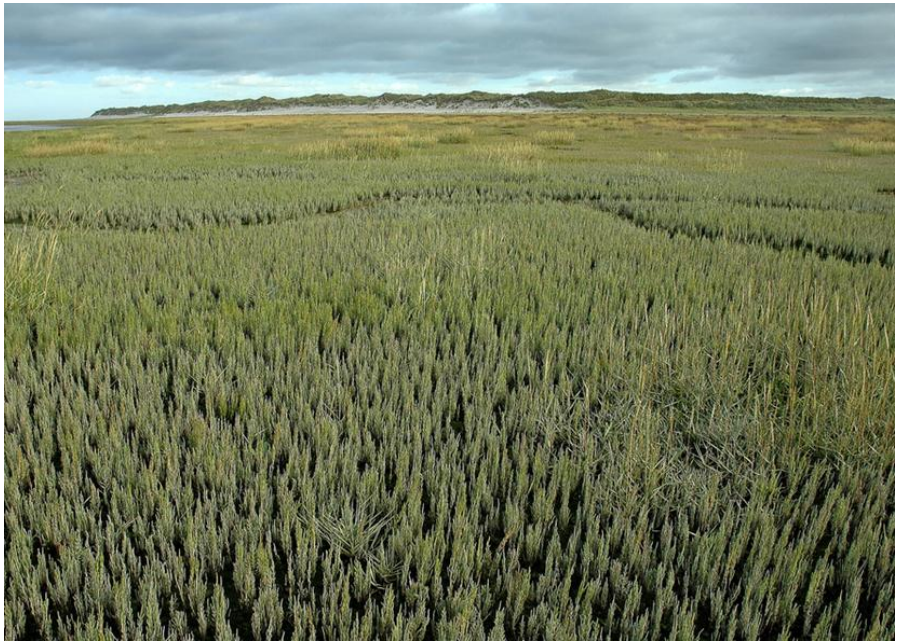
- Current scaling up with government support:
  - 2.7 million biodigestors in Guangxi (1/3 of households)
  - 7.7 million tons of coal and 13.4 million tons of wood equivalents are saved every year
- Savings of labour time by 2h/day on average
- Private sector was attracted (free rearing facilities)

Integrated food and biofuel production system: Jatropha for hedges and intercropping



- Stabilizes soil runoff, reducing erosion
- Improves soil structure and thus water infiltration
- As a result, soil fertility increases
- According to the University of Wageningen (NE), over a period of 4-5 years the yield of local food crops can increase by 20%, leading to more food security for farmers

Areas where food cannot be grown: energy production Salicornia for coastal deserts



- Edible salt tolerant plant, high in oil and protein
- Potential to produce animal feed as well as biodiesel
- Seawater irrigation

Areas where food cannot be grown: energy production Simarouba for multiple benefits in dry lands

- Grows under 500mm annual rain conditions
- 60-65% oil content for biodiesel
- Bioethanol from fruit pulp (11% sugar content)
- Biogas and thermal power from fruit pulp, oil-cake, leaf litter, shell and unwanted branches

- It comes to fruiting stage in about 6-8 years of age and yields well up to 50-60 years

Programme for the Development of Alternative Biofuel Crops

- On 14 September 2011 IFAD's Board approved a USD 2.5 million contribution
- **Overall goal:** to develop alternative (non-food or multiple-use) biofuel crops for areas where food cannot be grown
- **Specific objectives:**

1. Conduct coordinated research in a time-bound action plan along the entire value chain
2. Finance local energy provision pilot projects to enhance food security
3. Collect and disseminate information, research findings, and successful experiences
4. Facilitate and strengthen R&D networking and knowledge sharing
5. Mainstream biofuel investment projects in partnership with the private sector
6. Provide policy support to governments

Programme for the Development of Alternative Biofuel Crops

Breakdown of donor contributions (USD '000)

Donors	Contribution
IFAD	1,500
Government of India	1,000
Praj Industries	1,000
Syngenta Foundation for Sustainable Agriculture	600
UNIDO	500
Others	7,400*
TOTAL	12,000

* Expected

IV. OTHER CONCERNS RELATED TO BIOFUELS

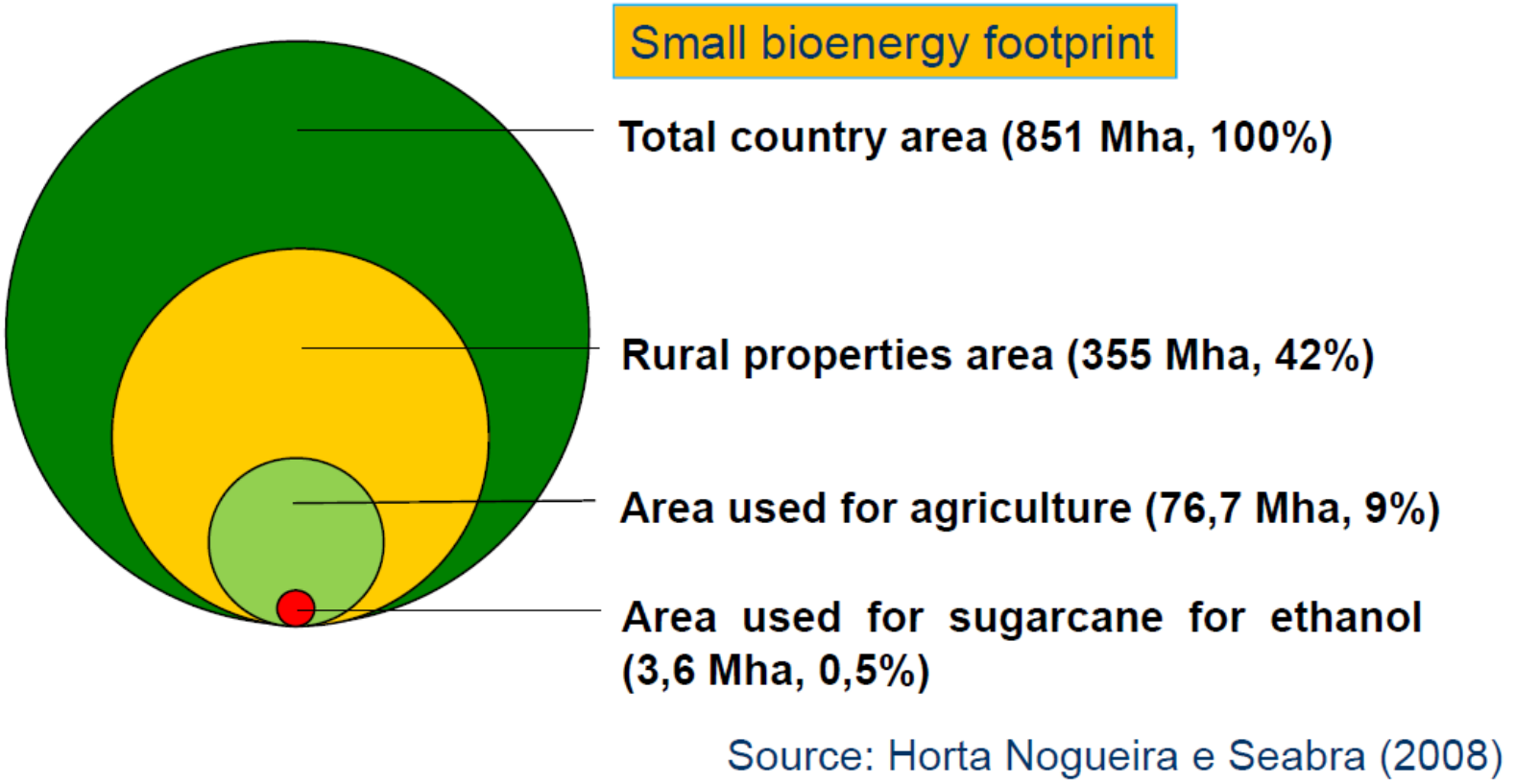
Risks for smallholders

Some major risks include:

- Introducing technology prematurely (Jatropha)
- Fuel price fluctuation
- Unpredictable climate conditions
- Reneging of contracts
- Displacement from land
- Unsustainable production
- Environmental aspects
- Diversion of water from food to fuel production

Is there land available for biofuel production?

- Brazil's case (27.5 billion litters of ethanol, 2009)



Source: Horta Nogueira e Seabra (2008)

V. SUMMARY AND CONCLUSION

Summary

- Food crops have been used for biofuel production
- The establishment of sudden blending targets in the west has led to supply/demand imbalances and increase in prices
- Instead of the policies, biofuels have been blamed for increasing food prices
- The lives of one-third of mostly poor people depend on diversifying agriculture into larger markets
- More balanced view on biofuels, especially if products are developed to address the concerns, is required

In conclusion
(some suggestions for consideration)

- As we explore the nexus between food security, energy and water, we need to consider a paradigm shift in approach to ensuring food security, by:
  - paying remunerative prices at farm gate and subsidizing the consumer; and
  - not following a prescriptive approach to grow low value crops
- Instead, the emphasis should be to support small farmers to respond to market forces
- Energy, provided the right mix is chosen, is an important instrument in assisting the poor as producers, employees and consumers
- The title of this conference should be *Food and Energy Security: How poor people can benefit*
- IFAD is pursuing bioenergy to benefit the poor by enhancing their food security through diversification and by developing water efficient crops
- We hope that you will join us in this effort

Thank you

Vineet Raswant
Senior Technical Advisor
Policy and Technical Advisory Division
v.raswant@ifad.org

Rodrigo Ciannella Martins de Oliveira
Economist
Policy and Technical Advisory Division
r.ciannella@ifad.org