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Incentives for the Efficient Use of Natural Resources in the New Swiss Agricultural Policy

Harald Menzi, Univ. of Applied Sci., Dep. of Agricultural, Forestry and Food Science
Eva Wyss, Federal Office for Agriculture FOAG
Beat Achermann, Federal Office for the Environment FOEN
Nutrient aspects in Swiss agricultural policy

**step 1**

- Since 1994 direct payment program with strong focus on reduced environmental impact and more animal welfare
  - Incentive payments if farmer comply with a set of measures: crop rotation, N and P balance equilibrium etc.; since 1999 mandatory
- N and P balance have led to improved nutrient efficiency:
  - Mineral fertilizer use: N $\approx 25\%$, P $\approx 70\%$, K $\gtrsim 90\%$
  - Manure nutrients: N $\approx 5\%$ N, P $\gtrsim 20\%$
  - no decrease in yields
  - Antropogenic NH3 emissions decreased by 13% since 1990
  - Farmers awareness for good manure management has increased considerably
- Manure covers approx. 70% of N fertilizer use (60% relative to $N_{\text{avail}}$), 75% of P fertilizer use and $\gtrsim 80\%$ of K fertilizer use
Implementation of nutrient balance restrictions

- Every farm has to calculate the N and P balance with the tool "Suisse-Balance"
  - Nutrient input = fertilizer recommendation (max. +10%)
  - 60% of N in manure is counted as plant available
  - Fertilizer recommendations relatively restrictive (e.g. winter wheat 140 kg N/ha, 60 kg P\textsubscript{2}O\textsubscript{5}/ha, silage maize (17.5 t DM/ha) 110 kg N/ha, 60 kg P\textsubscript{2}O\textsubscript{5}/ha)
- Balance locally checked; random examination by Federal authorities
- Farmers quantify their mineral fertilizer purchase according to Suisse-Balance
- All manure movements between farms have to be recorded on “HoduFlu” (internet) relevant for balance of both contracting parties
- In general good compliance
Resource programs (step 2)

• Since 2008 additional voluntary programs for additional measures with special relevance for the environment

• Cantons plan, submit and implement program
  – Chose strategy and measures to include
  – Set clear quantitative aims what should be achieved
  – Detailed assessment of baseline situation
  – Monitoring program
  – Six year duration of program
  – 20% Cantonal contribution to incentive payment (80% Federal contribution)

• Farmers can apply to join program
  – Fixed level of additional incentive payment (e.g. CHF/ha)
  – Obligation to participate until end of program
  – Obligation to continue with measures after end of the program
Resource programs

• 24 programs are implemented
• 24 of 26 cantons have a program
• Orientation of programs
  – Reduced ammonia emissions (17 programs)
  – Soil fertility (3 programs)
  – Soil/air/water
  – Biodiversity
  – Energy
  – Soil cover in vineyards
New: Resource Efficiency Incentives

step 3

• Starting in 2014 the Cantonal resource programs will be complemented by Federal Resource Efficiency Incentives
  – New programs launched by Federal Government (100% of payments)
  – Preparation and implementation simpler and more efficient than in present programs
  – Farmers in the whole country can subscribe for same measures
  – Contributions for restricted time

Aims

• Enhance the sustainable use of natural resources (soil, water, air)
• Improve efficiency of use of production inputs (nitrogen, phosphorous, pesticides, energy)
• Broad introduction of well focused resource saving techniques (convince farmers of benefits)
Measures to be included

- Air: low emission manure spreading techniques
- Soil: Conservation tillage
- Water: high precision pesticide application

Example low emission manure spreading

- Trailing hose, trailing shoe, slot injection deep injection
- CHF 30.- per ha and application; max 4 applications per year
- No payments from 15 November to 15 February
- Reduced N losses accounted for in N balance: +3 kg N/ha/application
- Payment only if no similar Cantonal program
Thank you for your attention