



Pivot irrigation system on temporary grasslands.

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- **Background**

Michał Kaczmarek runs family farm in Uścikowo, Wielkopolska Voivodship. Today farm is 63 ha big with 130 dairy cows of 8 600 l annual milk production per cow and is solely focused on dairy business. Farmer process about 20% of milk produced on a farm into fresh dairy products like cheese, yogurt, cream or butter. The short term objective of Michał is to increase number of dairy cows from 130 to 300. To achieve this farmer has decided to build a new, innovative cowshed equipped with robots.

Such a growth is driven by external economic and market factors as well as farmer's own ambitions, skills and knowledge on dairy trends in Poland and in Europe. Simple getting the same profit, not mention profit growth, from agriculture production in Poland after transition requires increasing volume of production, improving its effectiveness and concentration on chosen production segment. Farm growth in dairy production, apart from investments in buildings and technology, required increasing farm area to produce feed for cows as close as possible.

Mr Kaczmarek owns only 63 ha of land including 40 ha of temporary grassland and 23 ha of maize and grain. Farmer's strategy at the moment is to increase area and production of grass and to purchase maize on local market. This strategy is based on

situation where it is relatively easy to buy maize or maize silage from local market whereas it is rather difficult if not impossible to purchase good quality of grass. The other important issue is lack of sufficient rain fall during the year to produce high quality of grass in large quantities.

- **Detailed description**

To achieve his goals farmer decided to install a pivot irrigation system. He was advised by a private consultant as far as technology is concerned. His system in comparison to other systems do not require much labor and is very easy to manage.

A drilled well (200 meters deep) was dug as a source of water for irrigation. Three machines are used to irrigate three separate grasslands that have different location, size and shape. The parameters of every rampe pivot irrigation are adopted to specific agricultural plots.

Apart from irrigation technology farmer tested several garssland mixtures which would give the best production results being irrigated.

The decision when to irrigate is always underatken by farmer himself based on his visual evaluation of plants and soil.

- **Results**

The main results of the innovation are:

- Longer time of having temporary grassland on one plot – this time has been extended from 4 to 6 years
- Less costs of cultivation
- Higher production of grass – farmer cuts his grassland even 5 times per year
- Better quality of grass – all spices are present in mixture during all 6 years of its life

Having this innovation allows farmer to implement his strategy based on increasing of milk production on a farm and substituting maize with grass.

- **Adoption criteria**

Results of Michał Kaczmarek innovation can be directly adopted by other dairy farmers in Wielkopolska. This may be an important development as level of ground water is going down as a result of rain shortages in this region. Water in future will be probably most limited factor in agriculture production. We can already see irrigation of vegetables, maize, potatoes plantations here.

- **Future prospects** of the innovation development from the farmer point of view: What can still be improved? How can it be disseminated? What are the threats?

Farmer for the time being is satisfied with results he has obtained from his innovation regarding irrigation. He is now focused on a new investment in a very modern and innovative cowshed allowing him to increase production up to 300 dairy cows. However in this sense, investing a lot of money in technology and buildings, his innovation if feed production is of a crucial importance for the farm economy.