Spiralling demand for cheap food is pushing countries such as Poland towards intensive agricultural production, despite environmentalists' fears. As part of the BBC's Planet Under Pressure series, Julianna Kettlewell visits one of the country's many new hog factories.

A row of clean metallic buildings are just visible from the road. They squat defensively behind high fences and locked gates, and one can almost hear the low hum of computerised efficiency.

The hi-tech farm looks awkward in its shabby surroundings - a queer mirage of future times, in a land of rusty Fiats and wonky fences.

Pig factories like this one are multiplying around Poland, as the fresh EU member jostles to bring cheap food to Europe's hypermarkets.

Here, near Poznan, the community is enduring an uncomfortable baptism into modern farming.

Some locals feel the progress is long overdue, but others believe they - and their environment - are paying the hidden cost that consumers escape.

Intensive farming is the only economically viable way to meet the world's growing demand, not only for basic nutrition, but for Western-style meat-rich diets, say some experts.

But what price must be paid by the nations that fill our trolleys?

Streamlined

Poland, whose nostalgic landscape would almost befit a Thomas Hardy novel, has pressed the fast-forward button.

Foreign owned companies - like the US pork giant Smithfield Foods - are taking root around the country, ready to collar the European pork market.

Small crumbling sheds housing half-a-dozen pigs are giving way to rows and rows of uniform grey factory buildings, inside which thousands of porkers fatten at minimum expense.

Smithfield slaughters 1.2 million hogs a year in Poland and 35-40% of their pork produce is exported.
The company promises its international operations will boost the Polish economy and create jobs in a country where unemployment and poverty is high.

This may be true, but when the BBC visited the village of Wieckowice, near Poznan, it found a community deeply divided by the brave new farm in its midst.

Some locals are eagerly soaking up the newfound job opportunities, driving smarter cars, earning higher incomes; while others are feeling angry - in some cases militant. They say Polish factory farms are polluting their earth, air and water, as well as putting their small farms out of business.

**Dramatic change**

Smithfield Foods, which processes 20 million hogs around the world each year, understands nothing if not cost efficiency.

Staffing is kept to a minimum, and the farm we visited only employed five people - none of them local.

But they do support the local economy indirectly, by paying contract farmers to fatten their pigs before slaughter.

Most of these farmers have seen a dramatic change in lifestyles. Where they once had 20 or so pigs, they now have 1,000 or more, owned and fed by Smithfield.

Ryszard Nowark is one such farmer. His still rundown farm buildings now bulge with 600 Smithfield pigs.

The company pays him a wage and buys all the necessary pig-feed. The arrangement gives him financial security and shields him from the undulations of an unpredictable market.

When we met him, Mr Nowark was busy showing off his shiny new Mercedes, which looked incongruous in a graveyard of ancient farm implements.

"My life has changed for the better now," he told us. "We have extra profit because we are able to sell our grain - because we don't need to feed it to the animals anymore - and we get an income from Smithfield... hence the car."

**Costs and benefits**

But no factory farming system is problem free. Keeping thousands of pigs in one place may be cost-effective but it has one unsurprising consequence - large amounts of waste.

Pig slurry, if not handled with care, can be a dangerous pollutant. Studies have shown that slurry lagoons emit toxic gases such as ammonia and hydrogen sulphide which, in high concentrations, can cause headaches, eye irritations, mood alterations and fatigue.
Also, nitrates from the manure can seep through the soil into water systems. Nitrates have serious implications for aquatic life and if drunk can be a risk to human health.

Some environmentalists also believe pig manure can contain antibiotic resistant diseases.

"Factory farmed pigs are kept alive by using big doses of antibiotics," claims Marek Kryda of the Animal Welfare Institute. "But this is dangerous because it can cause disease resistance. And these resistant pathogens can harm other pigs and humans."

Many farms around the country store untreated slurry in lagoons, although at the Wieckowice farm, the pig's waste is mixed with straw to form manure and then spread on fields.

Smithfield officials say all their waste is processed according to Polish regulations, and that levels of airborne gases like ammonia are within the legal limits.

**Locals' fears**

But when the BBC spoke to the inhabitants of Weickowice, there was much anxiety about the hog factory, which is only metres from the local school.

"The problem is very bad," said villager Edmund Pawolek, who is coordinating the local resistance against Smithfield. "The local authorities commissioned some research and found that the permitted levels of antibiotics were 15 to 30 times more than allowed," he claimed.

"We are very afraid for our health. Sometimes the smell is so bad that the local bus will not stop in our village."

Although Poland's new hog factories are producing cheap, high quality pork, allowing the country to become a major exporter, many believe the low prices belie hidden costs.

"The price on the shelf is only part of the real price - there are other costs which are difficult to pay," said Mr Kryda.

"You have the environmental costs, like liquid manure which causes pollution. Then you have the farm neighbours who cannot sell their homes because the stink is so bad - then you have the health problems," he claimed.

"Small farmers have the whole cost in the price on the shelf, because they are not polluting, not poisoning anyone, not making anyone unemployed. The food is more expensive, but the hidden costs are less."

**Rare species**

Poland is still unique among its European neighbours.
Its flat landscape is a vast patchwork of tiny strips, each growing cabbages or housing a lonely cow. People stoop over ploughed earth and chickens mill near small drab houses.

The country is still blessed with rich biodiversity, clean air and water.

"In Poland we have 50,000 pairs of the rare white stork. That is 25% of the world's population," said Marek Kryda. "We also have European bison - the last few thousand in the world."

But in its struggle to compete in the global marketplace, Poland may eventually lose some - or all - of these qualities.

Only time will tell if the benefits outweigh the costs.