Pesticide use, issues and how to promote sustainable agriculture in Slovakia

Slovak Agriculture
The Slovak Republic or Slovakia (SR) has been a member state of the EU since May 1st. It is a small country with 5,379 mil. inhabitants. Basic statistics show that Slovakia covers a total area of 49,035 km², of which 49.9% is accounted for agricultural land. According to the OECD and EUROSTAT statistics, Slovakia is characterized as a rural country. About 48% of the population live in rural areas, 40% in transitional areas and only 12% in urban areas.¹

In 2002 agriculture accounted for 4.1% of the Gross Domestic Product, while in 1995 it accounted for 5% and in 1990 for 8%.² The employment rate in agriculture also declined noticeably from 12% in 1990 to 7% in 2001 (total loss of jobs: approx. 106,000). Compared to the average income in the SR, incomes within the agricultural sector are 26.3% lower.³

The farming structure is dominated by large corporate farms. In 2001 corporate entities cultivated 90% of the agricultural land, with an average size of 1241 ha. In the same year, small holdings (average size 39.2 ha) cultivated just 10% of agricultural land.⁴ 2.44 million ha of agricultural land were registered in the year 2002. Regarding the total acreage of agricultural land, arable land covers 58.78%, followed by meadows and pasture land (36.17%).⁵ On the one hand, one can constitute an increasing cultivation of cereals (the most important crop), oil-seeds and vegetables and on the other hand, a decreasing cultivation of forage plants, potatoes, maize and leguminous plants.⁶

Ecological agriculture in Slovakia is not developed very well - in 2002 only 11 eco-corporate entities and 65 eco-farmers cultivated 47,576 ha (2% of total agricultural land).⁷

Figure 1 shows the development the eco-farming sector has experienced over the last years. Referring to Mr.

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¹ Ministry of Agriculture (2004): Sector operational program – Agriculture and Rural Development
³ Ibidem
⁵ Ibidem
⁷ Ministry for Environmental Protection (2004)
Dusan Janovicek, director of the Slovak ecological farmers association Ekotrend, more than 90% of organic products are exported.8

Pesticide Use
Farmers with holdings over 10 ha are required to report pesticide use data. 3995 tons of pesticide products were applied in the SR in 2002 (2118.6 t of herbicides; 660 t of fungicides; 279 t of insecticides; 938 t of others).9 Compared to 2001 this meant an increase of 17%. The 10-year history of pesticides use can be seen in Figure 2. The intensity of pesticide use is also presented in Figure 2, about 1.5 kg active ingredients/ha pesticide were applied on average. After the EU accession an increased use of agrochemicals is expected because farmers are now subsidized by the EU.

Registration, authorisation and usage control of pesticides
The Central Inspection and Testing Institute for Agriculture (UKSUP), namely the Department for Plant Protection, is responsible for the national registration and the authorisation process of pesticides. The list of authorized products published in the official publication of the Ministry of Agriculture. Since 2001 the number of registered pesticide products has more or less stabilized to 600 and the number of active ingredients to 300.10

Pesticide residues in food and environment
Pesticides residues (PRs) in food are controlled by the State veterinary and food administration, especially by the Department for Plant Products and Department for Animal Products.

There are two sources of information on pesticide incidences in food: the regular monitoring scheme, based upon a representative „food basket”, and secondly, the official control of domestic and imported food and feedstuffs. In 2003, the official food and feedstuff control detected 54 different kinds of pesticides in 13,165 domestic samples and 62 different pesticides were detected in 7,734 imported product samples. In 16 cases residues exceeded the maximum residue limit, MRL (Table 1).

The official monitoring from 2002 analysed 39 different pesticides and the residues did not exceed their MRLs. However, these results are not representative, because at the same time there were about 300 different pesticides authorized.11

Pesticides residues in water are regularly controlled by the Slovak Hydrometeorological Institute (SHMU), Departments for Groundwater and Department for Surface Water Quality. Concerning ground water, PRs have been

Figure 2: Pesticide use in Slovakia

Figure 3: Authorized pesticide products in Slovakia, 2002
Source: Ministry for Slovakia, 2002

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analysed since 1982 twice a year and since 1997 only once a year (for financial reasons). In 1997 only 9 different pesticides were found in groundwater-samples, in 2003 this number had already risen to 37. Surface water is controlled by the SHMU regularly - within the “National monitoring of water quality in Slovakia”, but also via “Controls of water quality” - randomly by SHMU or indicatively if there is a suspicion of contamination by Slovak Environmental Inspection (SIZP).

Concerning regular monitoring, about 60 places in Slovakia were monitored in 2003. The places are chosen by their level of agricultural intensity. Samples were taken 2-6 times a year. At each place from 6 to 28 different pesticides were controlled (Table 2).

### Table 1: Pesticide residues measured in domestic and imported food 2003*

<table>
<thead>
<tr>
<th>Pesticide residues</th>
<th>N</th>
<th>&lt; MRL</th>
<th>% MRL</th>
<th>&gt; MRL</th>
<th>% MRL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>number of analysed samples;</td>
<td>findings over analysing set sensitivity,</td>
<td>findings over maximum residue limit (MRL)</td>
<td></td>
</tr>
<tr>
<td>Bromadiolone</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Cypermethrin</td>
<td>400</td>
<td>3</td>
<td>0.8</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Fenvlarate</td>
<td>304</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>Chlordane</td>
<td>401</td>
<td>6</td>
<td>1.5</td>
<td>7</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>all samples</strong></td>
<td>13165</td>
<td>761</td>
<td>5.8</td>
<td>11</td>
<td>0.08</td>
</tr>
</tbody>
</table>

### Table 2: Pesticides in Slovakian water 2000-2003*

<table>
<thead>
<tr>
<th>Year</th>
<th>Surface water</th>
<th>Ground water</th>
<th>Drinking water</th>
<th>Together</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>N</td>
<td>OL</td>
<td>N</td>
<td>OL</td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
<th>OL</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>0</td>
</tr>
<tr>
<td>1119</td>
<td>1</td>
</tr>
<tr>
<td>331</td>
<td>0</td>
</tr>
<tr>
<td>1492</td>
<td>1</td>
</tr>
</tbody>
</table>

* in 2002 no positive findings

### Persistent organic pesticides

A relatively complex investigation concerning POPs pesticides (e.g. Aldrin, Dieldrin, DDT, DDE, HCB, Heptachlorine, Mirex) was undertaken in a project, supported by the GEF/UNDP, which aimed to support the implementation of the Stockholm POPs treaty (2001): The monitoring of POPs in Slovakia as well as their inventory. The project was organised by the SHMU and focuses on POPs (Persistent Organic Pollutants) in all different environments. Final results from this report show that there is a tangible decrease of POPs residues in the Slovakian environment and that there are only local places contaminated with POPs above the official limits (e.g. the Zemplin region in east Slovakia).

The usage of DDT in agriculture is prohibited in Slovakia since 1974, but residues (although below MRL) can still be found today. Table 3 shows the average DDT concentration in different environmental matrices and demonstrates the cumulative potential of DDT.
Main targets for NGOs’ action

1. Widening and reinforcing already existing cooperative networking at the informative, political and practical level
2. Raise awareness - Bringing pesticide-issues into the media,
3. Initiate transparent food controls especially in supermarkets
4. Helping to optimise national controls and the monitoring system to become more effective and flexible
5. Information for consumers and farmers
6. Organisation of training and seminars focused on good (best) agricultural practice
7. Support the widening range of sustainable alternatives (e.g. organic agriculture)

The CEPA decided to try to bundle the capacity, energy and knowledge of all Slovakian NGOs involved in dealing with agriculture/environmental issues. On Friday, 26th March of 2004 representatives from important Slovakian NGOs met and finally founded the Agro-Eco forum, which unifies 15 NGOs from all over the country (e.g. Bird Life, Greenpeace, Friends of the Earth, …).

National links

Responsible ministries and authorization bodies:

UKSUP - Central Inspection and Testing Institute for Agriculture – www.uskup.sk; Tel: +421(0) 2 6442085; Fax: +421(0) 2 64462084; E-mail: f.hrdina@uskup.sk, j.schlosserova@uskup.sk

VUP – Food research institute – www.vup.sk, (food monitoring, statistic); Tel: +421-2-55574622; Fax: +421-2-55571417, E-mail: vup@vup.sk, salgovicova@vup.sk

SHMU – Slovak Hydrometeorological Institute – www.shmu.sk, (water monitoring, statistic); Tel: +421(0) 2 5477 1247, Fax: +421(0) 2 5477 4593, E-mail: SHMU-GR@shmu.sk, Jana.Domenyova@shmu.sk

VUVH – Water Research Institute – www.vuvh.sk, (evaluation of impact of pesticides on water environment, MRL, danger evaluating of active ingredients); Tel: +421(0) 2 59343 111, Fax: +421(0) 2 5441 5743, E-mail: scientia@vuvh.sk, kuthik@vuvh.sk

UPKM – Institute of Preventive and Clinical Medicine www.upkm.sk, (humans, tissues and impact of residues, MRL in humans…) Tel: +421(0) 2 59 369 111, Fax:+421(0) 2 547 71 094, E-mail: sekretariat@upkm.sk

SVPS – State veterinary and food administration – www. svps.sk (food, feed, animals – analyses of pesticides residues, MRL); Tel: +421(0) 2 602 57 215; Fax: +421(0) 2 654 26 320; E-mail: chudy@svsr.sk, buchlerova@svsr.sk,


Tel: +421(0) 2 492 84 369, Fax: +421(0) 2 443 72 641 mail: federica@uvzsrsk

SIZP – Slovak Inspectorate of Environment – www.sizp.sk, (accidents, leakages, emissions, illegal discharging, waste disposal…), Tel: +421(0) 2 654 22 408; Fax: +421(0) 2 602 92 525; E-mail: sizp@sizp.sk

Ministry of Environment; www.enviro.gov.sk; Tel: +421(0) 2 5956 2222; Fax: +421(0) 2 5956 2222; E-mail: info@enviro.gov.sk

Ministry of Agriculture; www.mpsr.sk; Tel: +421(0) 2 59 266 301; Fax: +421(0) 2 59 266 311; E-mail: tlaove@land.gov.sk

Ministry of Health; Tel: +421(0) 2 593 73 111; Fax:+421(0) 2 547 77 983; E-mail: office@health.gov.sk

NGOs working on sustainable agriculture issues:

CEPA – Centre for Environmental Public Advocacy – www.cepa.sk; (sustainable agriculture and rural development, pesticides) Tel/Fax: +421 (0) 48 419 33 24; E-mail: cepa@cepa.sk, lesinsky@changenet.sk

GREENPEACE – www.greenpeace.sk (chemicals, pesticides, residues in food) Tel:+421(0) 2 55424455; Fax:+421 (0)2 55424255; E-mail: info@greenpeace.sk, martin.hojzik@greenpeace.sk

SOVS – Bird Life – www.sovs.sk (bio-diversity, nature protection, agro-enviro measures, eco-friendly agriculture) Tel: +421 (0) 2 55422185 ; Fax:+421(0)2 55422186; E-mail: sosvs@sovsovs.sk, sutiakova@sovsovs.sk

Daphne – Institute of Applied Ecology – www.daphne.sk (vegetal biodiversity, agro-enviro measures in agriculture, eco-education), Tel:+421(0) 2 455 240 19; Fax: ++421 (0) 2 456 402 01; E-mail: daphne@changenet.sk, viestova@changenet.sk

Ekotrend – Association of Ecological Farmers in Slovakia – www.ecotrend.sk (ecological agriculture, bio-food production) Tel:+421 (0) 53 4511826; Fax:+421 (0) 34 6216037; E-mail: afr@eafra.sk, janovicek@ecotrend.sk

Ecotoxicological Institute – www.ekotox.sk (private laboratory – ekotoxicity, biodegradability); Tel:+421 (0) 2 4594 5223; Fax:+421(0) 2 4594 5223, E-mail:etcba@gtinet.sk

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