UKRAINE:
GRAIN HANDLING
CAPACITIES IN THE SEA PORTS

Kyiv, 2014
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III. GRAIN HANDLING CAPACITIES IN THE UKRAINIAN SEA PORTS

3.1. Development trends in Ukraine’s grain-handling sector

In the Soviet time, cargo storage capacities in Ukraine’s seaports were estimated at roughly 6 MMT a year. However, it was impossible to use these warehouses for exportation after the collapse of the USSR, because the infrastructure was only designed to receive grain vessels as the country imported cereals. One of the first commercial transshipment operations in Ukraine emerged in the late 1990’s in Illichivsk.

Since 2002 a boom was observed in the construction of grain export terminals in Ukraine.

In general the grain handling capacities’ growth in Ukraine was averaged as 20% annually.

The main reasons for the port capacities expansion were as follows:

- a deficit of modern high-technology and high-performance grain terminals against the background of the export potential increasing since the 2002/03 season;
- a growth of the grain transit traffic;
- shortage of grain handling capacities in the neighbouring countries, including Russia and Moldova;
- the appearance of new markets with high export resources available;
- the desire of exporters to reduce their marketing costs through finding better and cheaper transshipment services.

High-performance grain terminals continue enjoying strong demand. This is reflected in high transshipment volumes and in the concentration of specialized facilities in some ports (Odesa, Yuzhny, Illichivsk, Sevastopol, and Mykolaiv). At the same time, the role of small ports is reducing in grain exports.

This suggests that Ukraine is experiencing a process of specialization of some ports in grain cargo handling, and grain-handling transport hubs stand out, aimed at the world market and export demand.

3.2. Estimated theoretical grain-handling capacities in Ukraine

One of the ways to boost loading of grain to sea vessels is the use of specialized terminals and grain-handling facilities.

On July 1, 2014, theoretical grain-handling capacities in Ukraine estimated by UkrAgroConsult at ____ MMT.

3.3. Estimated actual grain-handling capacities in Ukraine’s seaports

The main factor limiting Ukrainian seaport capacities for export grain handling is poor throughput of port railway stations and approach lines thereto.
The port stations were built and equipped first of all for handling imports, which prevailed over exports at the latter half of the 20th century. But then the port cargo traffic direction changed dramatically from handling imports to handling exports.

A particularly sharp change happened in the operation of the key ports of Illichivsk, Odesa, Yuzhny and Mykolaiv.

The abruptly changed operational mode of ports could not but impact negatively the work of railway stations servicing them. Some stations are now unable to handle necessary volumes.

The range of cargoes unloaded in seaports expanded significantly. This sharply increased the scope of railway classification and shunting operations for railcar sorting and spotting in numerous port fronts and sections. Handling capacity of port stations and approach railway lines toward ports is lower than that of the ports themselves.

When a considerable number of grain railcars get accumulated on the approaches to ports, the Ukrainian Railways announces a ban on grain shipments by rail. As a result, rail transport stands idle for long both near the ports and inland elevators.

A similar situation arises when delivering grain by trucks. The grain carriers often stand idle in city streets waiting for unloading.

### Ukraine. Disparity between handling capacity of Ukraine’s major seaports and port railway stations attached to them

<table>
<thead>
<tr>
<th>Port</th>
<th>Combined grain-receiving capacity (railcars+trucks), KMT/day</th>
<th>Port’s capacity for grain loading to vessels, KMT/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odesa</td>
<td></td>
<td></td>
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<tr>
<td>Yuzhny</td>
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<tr>
<td>Illichivsk</td>
<td></td>
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<tr>
<td>Mykolaiv</td>
<td></td>
<td></td>
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<tr>
<td>Sevastopol</td>
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</tbody>
</table>

Source: own calculations made by UkrAgroConsult

When estimating actual capacities of Ukraine’s seaports and specialized grain-handling terminals, UkrAgroConsult took into account the following parameters:

- the port’s handling capacity in receiving grain from railcars (grain hoppers) and trucks (altogether)
- throughput of the port railway station
- historical data on grain handling in ports in 2005-2014

Historical data on grain handling in ports in 2005-2014 were of predominant importance for estimating actual capacities of Ukraine’s seaports and specialized grain-handling terminals.

Theoretical grain-handling capacities of Ukrainian ports and terminals (except the Danube ports) are estimated at ____ MMT a year, whereas UkrAgroConsult assesses their actual capacity to handle grain cargoes at ____ MMT, or almost 10% lower. The reasons include underdeveloped internal and port infrastructures.
Ukraine. Estimated actual grain-handling capacities in ports, KMT*

<table>
<thead>
<tr>
<th>Port</th>
<th>Terminal</th>
<th>Total receiving capacity, KMT/day</th>
<th>Ship-loading capacity, KMT/day</th>
<th>Theoretical handling capacity, KMT</th>
<th>Estimated actual capacity, KMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odesa</td>
<td>UkrElevatorProm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LLC InZernoExport</td>
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<tr>
<td></td>
<td>Odesa port elevator</td>
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<td></td>
<td>Olimpex Coupe/CHS</td>
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<tr>
<td>Yuzhny</td>
<td>TIS</td>
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<td></td>
<td>Borivage</td>
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* - estimate of UkrAgroConsult

3.4. Quantitative estimate of load of terminals, 2005-2012

As we mentioned above, the booming development of the grain-handling sector in Ukraine was driven by the country’s high grain export potential and the lack of specialized port facilities. The construction of port terminals and the development of grain-handling capacities progressed much slower than grain exports increased.

A quantitative indicator of grain terminal loading in Ukraine’s ports can be considered the load factor, which is a ratio of actual grain volumes (both exports and transits) handled by ports to their estimated theoretical total capacity.

When estimating the load of single grain-processing facilities, UkrAgroConsult uses the same technique, i.e. the load factor of capacities, which is a ratio between the actual bulk volume of cereals, oilseeds and processed products (both exports and transits) handled by grain facilities to their estimated total theoretical capacity.

High load factors are seen at terminals we singled out as highly effective.

3.5. Construction of new ports. Projects for upgrading and increasing capacity of existing ports

It should be noted that mostly private projects for constructing or upgrading port terminals currently exist in Ukraine.

The following can be considered as the most likely projects for the construction and expansion of specialized grain handling facilities:

If implemented, the announced projects may boost theoretical grain handling capacity of Ukraine’s ports by _____ MMT to _____ MMT and storage capacity by _____ KMT to _____ MMT by 2020.

Ukraine. Summary data on projects for constructing grain-handling facilities in ports

<table>
<thead>
<tr>
<th>Project/port</th>
<th>Storage capacity, KMT</th>
<th>Handling capacity, MMT</th>
<th>Planned implementation period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odessa</td>
<td></td>
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<tr>
<td>Nikolayev</td>
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<td></td>
<td></td>
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<td>Yuzhny</td>
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<tr>
<td>Kherson</td>
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<tr>
<td>TOTAL</td>
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</table>

Source: data from open sources
The 2013/14 upgrade of some grain-handling facilities in Ukraine made the ports more capable of handling export grains. So, UkrAgroConsult estimates theoretical grain-handling capacity of Ukraine’s sea ports at ___ MMT as of the beginning of 2014/15 against ___ MMT a year ago.

However, Ukraine’s actual capacities involved in grain handling have plummeted because of the annexation of Crimea. In addition, the intensification and expansion of hostilities in the east of the country lead to further reduction of actual grain-handling capacities, particularly in the port of Mariupol.

Due to the aggravation of the military conflict in East Ukraine, part of cargoes previously handled in Mariupol were switched to the port of Berdyansk. If more obstacles appear in the Mariupol port’s operation, the switch of export flows may intensify that will reduce supply of grain-handling capacities in Ukraine by another ___ MMT in 2014/15.

### 2014/15 supply and demand balance of grain handling capacities in Ukraine

<table>
<thead>
<tr>
<th>Period</th>
<th>2013/14</th>
<th>2014/15</th>
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<tbody>
<tr>
<td>Demand, including</td>
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<tr>
<td>Export</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply theoretical capacities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>practical capacities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>load ratio of theoretical capacities, %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>load ratio of practical capacities, %</td>
<td></td>
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</tr>
</tbody>
</table>

Source: UkrAgroConsult’s estimates