Green City Ukraine Report 2021

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Green City Ukraine



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Program

TABLE OF CONTENTS

1. INTRODUCTION	4
2. METHODOLOGY	5
3. DYNAMICS 2010-2020 IN URBAN GREENING IN UKRAINE	6
4. SECTOR PARTICIPANTS AND INTEREST GROUPS	7
4.2 NURSERIES	8
4.2.1 UKRAINIAN PLANT INDUSTRY ASSOCIATION (AURI)	8
4.3 URBAN LANDSCAPING ARCHITECTS	10
4.3.1 "ZELENBUD" LANDSCAPING ARCHITECTS	10
4.3.2 LANDSCAPING ARCHITECTS AT NURSERIES	10
4.3.3 SPECIALIZED URBAN LANDSCAPING FIRMS	10
4.3.4 FREELANCE URBAN LANDSCAPING ARCHITECTS	11
4.4 UNIVERSITIES	11
5. PUBLIC OPINION AND CITIZEN ACTIVISTS	12
6. KNOWLEDGE LEVEL	14
7. ECOLOGICAL FACTORS	15
7.1 USE OF THERMAL IMAGING	16
7.2 INVENTORIZATION OF TREES: INSPECTREE	16
7.3 USE OF THE NORMALIZED DIFFERENCE VEGETATION INDEX(NDVI)	17
8. FUNCTIONAL REQUIREMENTS	18
9. LEGAL FRAMEWORK	20
10. FORMATION OF THE URBAN GREENING BUDGET	23
10.1 PUBLIC SECTOR BUDGET, INTERNATIONAL DONORS	23
10.2 PRIVATE SECTOR	26
11. CURRENT TRENDS	28
11.1 SCORING POINTS WITH URBAN GREENING	28
11.2 QUALITY VS. TICKING THE BOX	28
11.3 3-D MODELING	28
11.4. INTEGRATED APPROACH	29
11.5 NEW PLANT VARIETIES VS TRADITIONAL PLANTING MATERIAL	29
11.6 COMPETITION	30
12.MAJOR PUBLIC PARKS RECENTLY COMMISSIONED	31
12.1 KHARKIV	31
12.2 MARIUPOL	31
12.3 LVIV	32
12.4 NATALKA PARK, KYIV	32

13. COMMERCIAL PARKS, AN EXAMPLE: DOBRO PARK	33
14. ROOFTOP/VERTICAL GREENING	33
15. THE DECISION MAKING PROCESS IN THE PUBLIC SECTOR	35
16. THE "PROZORRO" PUBLIC TENDER SYSTEM	35
17. IMPORT REGULATIONS FOR PLANTING MATERIAL	40
18. ENTRY INTO THE UKRAINIAN URBAN GREENING MARKET	41
18.1 OPPORTUNITIES	41
18.2 PARTNERSHIPS WITH LEADING UKRAINIAN NURSERIES	41
18.3 COOPERATION WITH LOCAL LANDSCAPING ARCHITECTS	42
18.4 "FLOWER EXPO UKRAINE" EXHIBITION / SECTOR CATALOGUE	42
18.5 TRAINING FOR ZELENBUD LANDSCAPING STAFF	43
18.6 FOCUS REGIONS	43
18.7 COOPERATION WITH COMMERCIAL PARKS	43
19 DUTCH GOVERNMENT SUPPORT	44
20. APPENDICES	45
20.1 UKRAINIAN NURSERIES	45
20.2 LEADING URBAN GREENING ARCHITECTS	49
20.2.1 ROOFTOP AND VERTICAL GREENING	49
20.3 "ZELENBUD" IN MAJOR UKRAINIAN CITIES	50
20.3.1 "ZELENBUD" 3D MODELINGS SAMPLES	50
20.4 SECTOR ASSOCIATIONS+CATALOGUE	51
20.5 PUBLIC ORGANIZATIONS AND CIVIL ACTIVISTS	51
20.6 URBAN GREENING SERVICES	51
20.7 URBAN LANDSCAPING COURSES AND TRAINING PROGRAMS	51
20.8 MAJOR REAL ESTATE DEVELOPERS	51
20.9 REQUIRED EXPORT DOCUMENTS	52
20 10 MAIOR DUTCH NURSERIES EXPORTING TO LIKRAINE	57

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1. INTRODUCTION

This market study has been commissioned in the framework of the Governmental Program Partners for International Business (PIB) and initiated by the Netherlands Embassy in Ukraine and the Netherlands Enterprise Agency (RVO) with the aim of increasing cooperation of Dutch suppliers of horticulture and planting materials, as well as Dutch landscape architects and sector suppliers with active participants in the Ukrainian public and private urban greening sector. The study gives a description of the development and trends in the sector and describes how the current relevant legislation in Ukraine affects it. It also describes the procedures of the national tender platform ProZorro used for public tenders in the urban greening sector. It identifies the commercial participants, governmental and non-governmental organizations and concludes by making specific recommendations. Firstly, on how Dutch suppliers can capitalize on the business opportunities in the urban greening sector in Ukraine. Secondly, on how to further follow up activities (trade promotion, incoming and outgoing mission, K2k components etc), also in the context of the <u>Dutch PIB and DHI programs</u>, should be structured in order to stimulate the cooperation of Dutch and Ukrainian participants and the development of the sector as a whole. Recommendations will be made on how Dutch suppliers to the urban greening sector can jointly promote "the best of The Netherlands" in Ukraine both to commercial parties and city councils. Foreseen benefits from the implementation of the recommendations and planned follow up activities are the increased use of modern approaches to urban greening. This will result in a better city climate, water management, air quality and biodiversity thus promoting a good urban living environment in Ukraine. The overall note in this report is a positive one. The urban greening sector in Ukraine currently is more vibrant than it has ever been since Ukraine's independence. We are confident that this report will provide the needed insights for those deciding to use the current momentum and explore the opportunities that are here.



Figure 1: S3T Urban Design

2. MFTHODOLOGY

This market study is based on 20 interviews with Ukrainian sector participants complimented by

on-line research using open resources of local and international organizations and institutions

with their documents on local policies and support programs. Hyperlinks are added for

reference. Interviews were held with the parliamentary committee responsible for revising urban

greening legislation. The interviews held have been focussed on obtaining information and

insight from active sector participants. During the course of the interviews we have been

pleasantly surprised by the general openness of the representatives of local authorities, business

and NGOs to discuss all relevant issues. The representatives of the IFIs on the contrary were

unreachable in spite of multiple attempts. Main market players are not aware about there

activities. At the same time the reporting of IFIs is more structural and available on-line, which

provided the solid basis for the desk research.

The following parties contributes to the report with interviews:

Sector associations

Nurseries

Officials of municipal companies "Zelenbud"

Landscaping architects

Universities

Civil activists

Private investors

Real estate developers

Ecology researchers

Custom broker

Import intermediaries

Due to Covid-19 approximately half of the interviews were held by phone or online by:

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5

3. DYNAMICS 2010-2020 IN URBAN GREENING IN UKRAINE

In the last 10 years the urban greening sector in Ukraine has undergone major changes. In the period 2010-2014 the approach to urban greening was still characterized by old-time practices dating back decades. Projects commissioned in this period did not have an integrated focus on improving the living conditions in a neighbourhood by improving the local ecology while taking into account maintenance cost of the chosen solutions. The creation of commercial spin off in the neighbourhood was hardly considered. Budgets were minimal and much of the materials used was purchased from communal nurseries, often still dating back to soviet times, or private nurseries linked to people with a history in the communal city greening structure "Zelenbud". Projects were inspired by short term needs and mostly related to the upkeeping of existing parks and fulfilling the minimal requirements to satisfy when new housing developments were commissioned. It was even no exception that green areas in the city boundaries were sacrificed for housing developments, without the original acreages of green area being compensated for.

From 2014 onward the development of the urban greening sector has turned the corner in nearly every aspect. Due to government reforms the collection and distributions of tax proceeds has radically changed. Previously taxes were collected locally, transferred to the national budget and subsequently redistributed to regional and city budgets. This hugely bureaucratic system created a situation where city budgets in general were limited and where approval on most projects had to be given on several administrative levels higher up. After Decentralization reform came into force 60% of tax revenues stay on the city level and can be allocated for local needs. This has created a surge in infrastructure spending across Ukraine cities large and small, including investments in urban greening. With a bigger budget being available, contrary to what was the case, progressive landscaping designs with a more structured approach are now often commissioned prior to tenders for the actual purchase of input materials being held. More and more often resulting in modern styled urban greening projects.

The local demand is rising however the experience of the Ukrainian sector players is still limited and the need for foreign expertise on urban greening is increasing.

4. SECTOR PARTICIPANTS AND INTEREST GROUPS

4.1 MUNICIPAL GREENING COMPANIES "ZELENBUD"

The "Ecology Department" in Ukrainian city councils is responsible for existing parks and initiating the construction of new projects. For the practical implementation of the work to be done it relies on its subsidiary branch "Zelenbud". It is the ecology department's responsibility to set the longer term strategies for maintaining and improving living conditions in the Ukrainian cities. It monitors the air and water quality and makes safeguarding these a factor when implementing urban greening projects.

"Zelenbud" roughly translates as the "Greenery department" It is a structure that has its origin in pre-independence Ukraine and since then is gradually being transformed.

The average "Zelenbud" is a hierarchical structure where in the bigger cities it is divided into district sub-divisions. In Kyiv the total number of employees tops 3000. "Zelenbud" in other cities often has a relatively large number of employees. Roughly it comes to 100 "Zelenbud" employees per 100 000 inhabitants. Previously a "Zelenbud" structure had multiple nurseries of its own from which it sourced the majority of planting materials that it needed. By now only few of those are left. The exception is annual planting material for city parks which are usually still sourced from "Zelenbud" nurseries.





Figure 2: "Zelenbud" nursery and tree trimming

In the Netherlands and elsewhere it is common practice that private landscaping companies are awarded contracts for maintaining city parks and green areas. In Ukraine spring planting, irrigation, tree trimming and general maintenance are all tasks that are done by" Zelenbud" themselves, nearly without private contractors being involved. Besides its practical maintenance function "Zelenbud's" management has a role in preparing proposals to the city's ecology

department for parks reconstruction or new urban greening projects to be initiated. However in most cases cannot independently approve new projects. This authority lies with the ecology department and city council. In smaller towns the function of "Zelenbud" is performed by the Municipal Enterprise "The department of communal services" (in Ukrainian - КП "Виробниче управління комунального господарства").

4.2 NURSERIES

Ukraine has about 100 nurseries producing plants, bushes and trees supplied to urban greening projects. Most is being imported as seedlings from the Netherlands and grown to maturity locally. Belgian and German seedlings are also popular. Germany is the preferred supplier for mature trees, Belgium seedlings are currently attractive because of better prices. A database with 50 of the most prominent Ukrainian nurseries can be found in the appendices to this report. The ten largest nurseries listed are estimated to do 25% of the business in urban landscaping projects. This information is provided by the Ukrainian Plant Industry Association. This association unites most of the largest nurseries. Larger nurseries having won tenders for urban greening projects often use material from smaller nurseries, additionally to that grown by themselves. The level of professionalism varies among nurseries, but the knowledge level in the top 10 is high due to active exchange of information and technology with their European suppliers. They use modern production methods and often employ their own landscape designers. For example "Eva Sad", a large nursery near Kyiv, has their own design department able to handle 5-10 larger projects simultaneously.

Nurseries that are successful in winning tenders for urban greening projects typically have a separate person, or even a department, dedicated to the city tenders that by law have to be organized through the government run ProZorro tender platform. The platform requires a high level of organization and discipline to get acquainted, fulfil all requirements and follow the procedures. Smaller nurseries usually lack the human resources to successfully take part in ProZorro tenders.

4.2.1 UKRAINIAN PLANT INDUSTRY ASSOCIATION (AURI)

The larger Ukrainian nurseries have organized themselves in the NGO <u>Ukrainian Plant Industry</u>
Association (AURI). The association was established in 2015.

It has several objectives:

- To promote the measures that will increase sales for both members and non-members on the Ukrainian market.
- To serve as a platform for bridging the gap between the private and public sector.
- To promote the rational use of limited resources.
- To introduce the standards for planting material in order to increase the competitiveness of Ukrainian produce.
- To represent Ukrainian nurseries to prospective export markets through exhibitions, conferences and seminars.

The timing of the founding of the association was not random. It coincided with the adoption of the laws in 2014 and 2015 on self-governance for local government and the reform on decentralization, which was the starting point for increased spending on urban greening.

The association activity calendar has 2 main yearly events. Firstly, an excursion tour (www.auri.org.ua/en/project) organised mainly for mid-level employees, landscaping architects from "Zelenbud" structures across Ukraine. The aim is to familiarize them with new developments in urban greening and with offers from different nurseries across Ukraine. The second event is the "Green Cities conference" where sector specialists gather and discuss various topics related to the Urban Greening sector.

The latest edition (www.greencities.org.ua/programa/) had the following topics:

- Urban greening and beautification of Kyiv. Results and plans
- Urban greening: Problems and solutions
- Best trees variety for urban greening. European experience
- New technologies and solutions for city park irrigation systems
- How does "Zelenbud" work in Poland?
- Car free residential areas
- Residential area greening
- Modern playgrounds for children
- Presentation of the "Inspectree" online platform for trees registration in cities
 (www.inspectree.net)
- Tree trimming in cities.

The program of the conference is open for Ukrainain and international speakers convening the specified program agenda.

Besides the yearly event calendar AURI acts as a lobbying body. It proactively addresses the problem of Ukraine's outdated legislation on urban greening by constantly working with

government officials on different levels, promoting the adoption of international practices and legislation.

4.3 URBAN LANDSCAPING ARCHITECTS

Ukraine has a limited number of experienced, specialized, urban greening architects. Within the sector they are found on different levels. Professional landscaping architects are united in the GLAU-The Guild of Ukrainian Landscaping Architects (www.glau.com.ua).

4.3.1 "ZELENBUD" LANDSCAPING ARCHITECTS

Each "Zelenbud" has its own landscaping architects. However, being a traditional organization its in-house landscaping architects often lack the needed experience and access to resources. Although within "Zelenbud" there is an understanding that new projects need to be developed based on concepts radically different from the past. On average the level of the projects developed by "Zelenbud" is considered traditional, often not taking into account the latest international trends in public greening projects.

4.3.2 LANDSCAPING ARCHITECTS AT NURSERIES

The larger nurseries have their own in-house landscaping architects or working relationships with freelancers. Their specialization usually lies in private sector projects. Both for individuals and commercial real estate developments. Projects developed here are often already quite progressive as new international trends are being integrated. Some have recently also started to develop roof top gardening projects, indicating that demand for these projects is definitely on the rise with offers and experience limited. Progressive as they are, even these architects being in the lead admit that they are very much interested in cooperation with experienced urban landscaping architects from the Netherlands and elsewhere for the development of integrated urban greening projects.

4.3.3 SPECIALIZED URBAN LANDSCAPING FIRMS

In Ukraine there is a limited number of specialized urban landscaping agencies, because demand for their services has only been there for some years. Their clients are mainly real estate developers and private companies. A leading "Zelenbud" official in her critical remark stated that the projects of these agencies focus on a nice clean picture, but lack a much needed integrated approach. Urban landscaping agencies from their side complain that "Zelenbud" and the public greening sector in general is a very difficult partner to work with, mostly because in any project several organizations are involved, each with a slightly different agenda.

4.3.4 FREELANCE URBAN LANDSCAPING ARCHITECTS

Ukraine has a large number of landscaping architects that work independently. They offer their services online and through informal networks in the urban greening sector. This group is also said to prepare reconstruction proposals for existing city parks on their own initiative and then lobby to get these "off the shelf" project proposals accepted by city councils. When successful, their projects end up being tendered for completion. We have not been able to verify to what extent this is very common practice. A working relation with this group of stakeholders could provide additional business leads for the Dutch companies.

4.4 UNIVERSITIES

There are several Universities that offer urban landscaping courses. Their contact details can be found in the appendices. One example is the Institute of Biology and Medicine of the Taras Shevchenko National University in Kyiv. Since 2017 the Institute offers a bachelor degree course in "Landscape design" and since 2019 it offers a master degree "Urban landscape design". The fact that university urban landscaping degrees are now being offered is the response to the growing demand for the services of qualified landscaping specialists. In the "Urban landscape design" course the emphasis is on solving the problems that arise in urban environments, reducing the burden on urban ecosystems and the selection of planting material for urban greening projects with suitable photosynthesis and heat absorption qualities. It further addresses vertical landscaping of buildings, including rooftop greening and the filtration of air and water. It also addresses recreational and maintenance issues.

During their studies students acquire practical experience by taking part in assignments commissioned by city councils and private nurseries with whom the faculty has a working relationship. These students and graduates are of high demand and some of them have successfully started their own businesses, f.e. in monitoring environmental factors by drone and satellite surveillance.

The university urban landscaping courses are a very recent addition to the curriculum. Universities are eager to develop a working relationship with universities in The Netherlands with the aim of increasing the level of the courses offered and setting up exchange programs. Other sources interviewed during this study state that the level of the courses currently offered is not up to speed. A statement made several times is that the courses are too theoretical and still too much focussed on niche topics, lacking the comprehensive approach to urban greening that the market already requires.

5. PUBLIC OPINION AND CITIZEN ACTIVISTS

The public opinion on urban greening is positive and there are plenty of organized groups of citizen activists that push for new projects to be implemented (on greening, cleaning, playgrounds for kids etc). There are mechanisms for public opinion to be taken into account when urban greening projects are planned. To what extent these mechanisms are effective, depends on the perspective taken. We will shortly address some of them.

In Ukraine an online platform exists for the submission of project proposals by citizens, called "Громадський бюджет" ("Gromadskiy Budget") - public budge (f.e. in Kyiv https://gb.kyivcity.gov.ua/) . The proposals for local urban greening projects can be submitted also through this platform, nation wide. The platform was created by the Eastern Europe Foundation, the Swiss Community Participation Program(EGAP) in partnership with the State Agency for e-Governance of Ukraine. City councils should independently register for participation on the platform. In case they need any technical support, it is provided free of charge by the platform administrator. The platform can be used individually by citizens for submitting their proposals and/or tracking their implantation. A bank ID or digital signature is requested for registration.

According to the director of "Zelenbud" in Kyiv 90% of all urban greening projects that are submitted through the platform are approved. They would make up to 5% of all projects in Kyiv. The platform however is not a tool for citizens to participate in the discussion on projects initiated by city councils itself.





Figure 3: "Zelenbud Kyiv", public consultations on park reconstruction in the Solomenskyi district

Urban Crew. <u>Urban Crew</u> is an organized group of civil activists and is in general critical on urban greening projects undertaken(<u>www.facebook.com/kyivurbancrew/</u>). Projects are claimed to be

more expensive than needed, setting the wrong priorities and using the wrong planting materials. One of their prominent members got a job in "Zelenbud" in order to learn in practice how the organization operates. The obtained knowledge and insights gained are now used to the benefit of activists. "Urban Crew" has a working relationship with the very progressive director of the ecology department in Lviv, the latter giving guidance to "Urban Crew". The estimated percentage of urban greening projects initiated through civil activists and "Urban Crew" and submitted to Kyiv "Zelenbud" are nearly the same, between 5 and 10%.

The Ukrainian Ecological Club (www.ecoclubua.com) is a registered NGO. Their mission: "To assist in the conservation of the natural environment and reduce the negative impact of people on it through the promotion of environmental lifestyles and the continuous ecological education of children and adults". One of their main projects is the "Green Wave" movement. It is an online project about environmental news and a community of people wishing to promote sustainable development principles in all areas including urban greening.

According to the director of AURI (www.auri.org.ua) the average level of input provided by civil activists is low. In his opinion they often do not have the full understanding of what it takes to create successful urban greening projects, not able to think in terms of integrated concepts and lacking knowledge of which planting materials best to use. AURI however works with civil activists in order to steer projects under the discussion in a desired direction by increasing their knowledge level. One leading urban architect characterizes the practical input by activists as "unfortunately being limited to making the needed noise".

The initiative like https://www.saveecobot.com/en informes the population about the eco problems in their regions and encourages them to become the active participants in reporting and creating awareness about the ecological situation in their neighbourhood and on the national level.

6. KNOWLEDGE LEVEL

An important conclusion of this study is that on all levels of the urban greening sector major steps forward have been made in the last 5-10 years. Everybody is open for cooperation with suppliers and specialists from The Netherlands when this leads to new insights and better quality projects. Participants are open to experiments with new concepts, provided that they fit local reality. Companies that decide to enter the Ukrainian market will have to prepare well and understand that their Ukrainian counterparts are in general aware of the international trends and practices, but may yet have limited experience with them.

"Zelenbud" nowadays has access to urban greening budgets which are multiple times what they previously were. The staff of "Zelenbud" in big cities is motivated and eager to learn about new concepts. Their senior staff is usually middle aged with a decade or two of experience. They realize that changes are needed. However, given the fact that their approach up until recently was traditional and conservative it will take serious effort to have new concepts and the use of new plant materials take root with them.

Nurseries, the bigger ones, have already access to new concepts and planting material through their suppliers in Europe. Specific experience in modern urban greening concepts with the landscape architects they employ is however limited. Successful urban greening projects require an integrated approach, where besides the "green" part of the project, the integration of functional, recreational, legal requirements and maintenance constraints all have to be taken into account. Also the fact that existing public parks have an existing structure has to be taken into account, even when it is up for a major reconstruction. A remark made several times during the course of our study by "Zelenbud" representatives is that many project proposals prepared by contemporary Ukrainian landscape architects outside "Zelenbud" are "just nice pictures", without regard to many practical issues.

Universities offering urban landscaping courses at the moment do not yet deliver the knowledge required by the market. This is because of the lack of resources and access to universities abroad, whose programs can be used as examples for the development of curriculum in Ukraine. It has to be taken into account here that the market has made such a sudden leap forward that it will take time and effort for universities to catch up.

Civil activists have a desire to improve their neighbourhoods and there are plenty of groups active. In the course of our study the general opinion is that although their intentions are sincere, they need a lot of guidance to make their proposals such that they can be practically implemented. They are taken seriously though and when possible their opinion is often taken into account.

Contemporary Ukrainian urban greening architects specialize in the development of modern concepts based on international trends. They are more popular among corporate clients and real estate developers and for the time being less among "Zelenbud" staff for the reasons given above. The urban greening architects themselves find it often more worthwhile to offer their services to commercial clients as these assignments are more straightforward with less bureaucratic and legal hassle involved than in public projects. At the same time there are several urban greening architects who are actively involved in lobbying a total overhaul of urban greening legislation on governmental level. They understand well that they will be the first to benefit from these changes.

7. ECOLOGICAL FACTORS

During recent years the public awareness about ecological problems in the cities and settlements improved significantly. The use of on-line tools like https://www.iqair.com/us/ukraine and https://www.saveecobot.com/en helps not only monitor the air, water quality in the cities but also use these sources as reference in addressing the critical problems.

Among the major eco-challenges for the cities sustainability which can be solved with the help of greening is adaptation for climate change. Flooding during heavy rains, extreme high temperatures especially during the last 10 years. High summer temperatures "heat island" mainly affect the most vulnerable categories like elder people and children. Another point of attention is the tree damaged by strong wind and storms. The aging trees require additional control and inspection.

Since urban greening has started to get better funding (see §3), the funding of projects that study ecological factors related to urban greening has also improved. Several initiatives have been successfully launched in this field with the help of international donor programs. For example, from 2015-2017 the National Ecological Centre of Ukraine (NECU) took part in the

program Climate Forum East (www.climateforumeast.org), financed by the European Union, the Austrian Development Agency and Austrian Red Cross Society. In the course of the program a "climate change city vulnerability assessment" was made. The results were already applied in four cities (Uzhgorod, Lviv, Khmelnytsky and Odesa) and can be used in any city of Ukraine.

7.1 USE OF THERMAL IMAGING

Thermal images from satellites and drone surveys by the company **Drone.UA** have been used since 2014 in Ukraine to determine city surface temperatures during hot weather. To study the role of greenery in the formation of the microclimate of the city the average summer temperature within districts and the percentage of green territories in these districts were compared. In the hottest spots corresponding to surfaces such as sand, building roofs, asphalt and concrete temperatures reached 56 °C , while the temperature of water surfaces and large forests and park areas was 23-25 °C. This type of research clearly shows the difference in surface temperatures between space open to the sun and shaded green areas of up to 20 ° C. There is a clear relationship between the temperature in residential areas and the density of greenery. It confirms the importance of a sufficient level of urban greening in cities in order to counter the heating up of cities, especially in a time of climate change. The data gathered shows the influence of green areas on the climate and temperature in the urban environment, as well as the effectiveness of various types of trees in the formation of the microclimate of the city. Based on the analysis of the data, recommendations were developed for "Zelenbud" in Kyiv to integrate climate change issues in planning new zones and maintaining existing ones, as well as changing and recommending laws and regulations that govern urban greening. This type of research makes it possible to use more effective maintenance and planning measures for urban green spaces, which will lead to improved adaptability to drought and high temperatures.

7.2 INVENTORIZATION OF TREES: INSPECTREE

A recent addition to the tools that can be used for maintenance planning of city parks in Ukraine is a service offered by Inspectree, an online platform developed by Lviv IT specialists. Through Inspectree City councils can order an inventorization of trees to be carried out where trees are being labelled and their location, condition and type is categorized. The city of Lviv was the first to use this service and other cities in Western Ukraine have already followed. Besides its use for maintenance planning by "Zelenbud", citizens can also go to the "Inspectree" website and check the condition of the trees in their neighbourhood. If it is highlighted in green it is in good

condition, if yellow the condition is satisfactory, but requires intervention, and if red, the tree is in poor condition. An asterisk on the map marks exceptionally valuable trees.

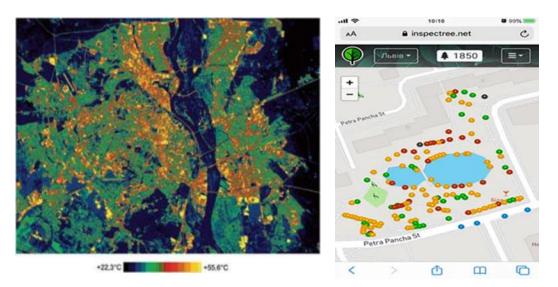


Figure 4: Surface temperature of Kyiv , Landsat-8 satellite. Source: The Ukrainian Ecological Club "Green Wave"

Figure 5: Trees categorized by Inspectree in Lviv

7.3 USE OF THE NORMALIZED DIFFERENCE VEGETATION INDEX(NDVI)

During the planning of urban greening projects for certain projects research is commissioned to analyze the project based on international standards, specifically the Normalized Difference Vegetation Index (NDVI). This index is used to identify the condition of vegetated areas. It indexes the conditions of green areas using a.o. remote sensing data from satellites and drone surveys. It is also used to determine the photosynthetic capacity of green areas. Ukraine Institute of Biology and Medicine at Taras Shevchenko National University is one of the institutes that conducts NVDI surveys.

8. FUNCTIONAL REQUIREMENTS

Contrary to what was common until recently functional and practical requirements have become important factors when urban greening projects are planned. Previously fitting the minimal norms using only traditional planting material seemed to be the usual approach. This has largely changed. Factors that currently are specifically addressed in most projects are:

Irrigation. Climate of Ukraine is changing and gradually becoming dryer (watch <u>FAO on Adapting to Climate Change in Ukraine</u>) This means that central irrigation systems have to be integrated when developing new projects. Also existing parks need investment in construction and renovation of irrigation as many of those require manual irrigation in the hot summer months which is costly and labour intensive. The use of drought resistant varieties like perennial herbs and succulents can also be a solution for new projects with limited budgets.



Figure 6: In the absence of central irrigation systems, a common sight in traditional city parks across Ukraine

• Maintenance and replacement cost. Traditionally "Zelenbud" annually plants large amounts of one-year plants produced in their own, outdated, nurseries. This is costly and difficult to maintain. The new trend is alley trees, hedges, perennial plants and ornamental grasses. As noted by one "Zelenbud" official, the longer the perennial plant lifespan the better. A definite change in perspective. Active leisure. More and more frequently active leisure areas are integrated in urban greening projects. Playgrounds for young children have become a basic element in both existing parks and new developments. Recently also skate parks and bicycle roads have become popular additions in the bigger cities. Common elsewhere, new in Ukraine.





Figure 7: Recently a 25km bicycle track was realized between Kyiv and Irpin(left). Skatepark in Chernihiv (right)

• Commercial interests. There is a growing awareness that urban greening projects should be integrated with general urban planning and when done properly this can boost commercial interest in the area. Real estate developers will favour the near vicinity, restaurants, shops and rental stations will spring up nearby or within. There is however still a significant bottleneck in this field which is the lack of experience among all involved. As noted by Kyiv's leading urban architects and "Zelenbud" officials alike there is often difficulty finding a common understanding of how to develop an integrated concept. Also contradicting legislation and interests contribute to this problem. Once these issues are solved, cooperation and finding common ground will become easier. Dutch Urban greening architects with experience in integrated concepts would be an interesting partner for local architects and Zelenbud alike, but there is the paradox in many cases that implementation will prove (too) difficult until legislation has been harmonized.

9. LEGAL FRAMEWORK

The legal framework that regulates the urban greening sector is a very complex one. There are numerous laws, by-laws and norms, often contradicting or not interlinking, that currently still have to be taken into account when planning new projects. The system is so complex that nearly every project has to be approached from a different angle, as depending on the location, the different rules apply. One of the main obstacles from a legal point of view is that green areas and parks have to be legally linked to a certain land plot as if they are real estate objects. For that reason legislation applies that makes sense for real estate, but not for urban greening projects. The existing parks within city boundaries have historically ended up belonging to different public structures requiring a different legal approach for different projects.

The existing legislation that is specific to urban greening leans very much to regulating maintenance of city parks and green areas and even there it leaves much open for interpretation. For example, when trees need to be (re)planted there is little clarity as to their type and required maturity which can lead to low quality or young material being used.

For the development of new urban greening projects it is often a challenge to determine which combination of legislation will apply. As this is nearly never a black and white issue, planning takes much longer than needed. Agreement in the planning phase takes a lot of consultation between many parties involved, each of them has to give their approval and in the end take part of the responsibility for the project's implementation. This shared responsibility often leads to a situation where competing interests create additional delays in the implementation of projects.

Private investments, through funds or donations, are also hindered by the current legislation. It means in practice that a donor willing to make a grant has to make a big effort to comply to get his donation accepted and his project realized. It paradoxically is not uncommon for a donor ending up in a situation where getting a city council to accept his contribution he actually has to incur additional expenses.

It has to be noted that there are significant differences in the ease, or lack of it, with which practical solutions are found to circumvent the legislative obstacles around a new project. Kyiv is generally named as the most challenging city. As a practical illustration, one of Kyiv's most progressive urban landscaping agencies gets most of its assignments for public greening projects in cities other than Kyiv itself. When it concerns projects in Kyiv itself the projects are mostly

commercial. This is the result of deliberate choices made as to where and which projects to aim for and which to ignore in order to most effectively use the available resources. Lviv and other Western Ukrainian cities are noted as the easier cities to work in. Dnepr, Kharkiv and other large Eastern Ukrainian cities are also considered easier to work in than Kyiv. Bucha, a small town close to Kyiv, is hailed as an example where urban greening projects are planned and implemented most easily and correctly. In central Ukraine Cherkassy is a positive example.

What is laid down relatively clearly in urban greening legislation is the size of the space within city boundaries that needs to be green. Per 1 inhabitant a Ukrainian city is required to have 20 m2 of greenery, excluding forest areas that might stretch into the city boundaries. Further, a hectare of urban greening should have an average of 200 trees and 2000 bushes. As an illustration of the gaps in the current legislation: there are hardly any strict norms as for the age and type of trees and bushes to be used.

Fortunately, all parties agree that change is needed. Ukrainian Parliament has instructed one of its committees on regional development to prepare coherent legislation on urban greening that should eliminate the current shortcomings and make the system of planning, design, implementation and control of urban greening in Ukraine more rational and transparent. The committee has identified 17 key issues that should be addressed in the new legislation. In the course of this study the parliamentary committee in charge of drafting new urban greening legislation has invited The Netherlands to join this process. The first consultations have been held. A transparent landscaping market will stimulate fair competition for foreign companies as well as local manufacturers and distributors.

The documents which can provide opportunities for the business are the concepts or Action plans developed by the city authorities and adopted by voting of city councils. Usually these documents provide plans, vision and budget for a period of 2-5-7-10 years. The example can be a text of a draft program for complex greening of Zaporizhzhya for 2019-2029. It is developed based on the following laws and legal norms:

"Laws of Ukraine "On Local Self-Government in Ukraine", "On Improvement of Settlements", Methodical Recommendations for Development of Local Programs for Development and Preservation of Green Plantations, approved by the Order of the Ministry of Housing and Communal Services of Ukraine, Rules of maintenance of green plantations in settlements of Ukraine, which are approved by the order of the Ministry of Construction, Architecture and

Housing and Communal Services and registered in the Ministry of Justice of Ukraine. The program is developed taking into account provisions of the town-planning documentation "Project of modification of the general plan of the city of Zaporizhia", "About the statement of town-planning documentation" as well as the Strategy of development of the city of Zaporizhia until 2028, approved by the decision of the Zaporizhia City Council."

One more example is the Complex ecological program for Lviv for 2017 - 2022 approved by Lviv City council on 27.04.2017 # 1881 https://www8.city-adm.lviv.ua/inTEAM/Uhvaly.nsf/(SearchForWeb)/90D7918C562FD4EDC225811D0045FBBF?Open Document (Ukr).

As an illustration of the legislation's complexity, figure 8 shows an overview of laws, by-laws and norms regulating urban greening in Kyiv until recently.

Landscaping laws and norms:	Relevant to:	Competent authority	
State DBN building norms on	Landscaping standards in	Various civil authorities	
urban planning and	cities and villages		
construction in cities and			
villages			
General plan of Kyiv until	Urban greening projects in	Kyiv city council	
2020 Law of Ukraine On	Kyiv	Ministry of Justice	
landscaping in cities and	Clearing, drainage and landscape engineering	Ministry of Justice	
villages	works		
vinages	Legal and organizational	State Housing Committee	
Law on maintenance of green	norms of landscaping	,	
areas in cities and villages of	aimed at ensuring	Department of Public	
Ukraine	favourable living	Works	
	conditions		
Law on maintenance of	Maintenance of	State Housing Committee	
residential buildings and	courtyards and adjacent		
adjacent territories	areas		
	Restriction of economic	Kyiv city council	
Law on improvement of Kyiv	and other activities that		
	may affect the condition		
Law on the Nature Reserve	of green areas National parks, botanical	Ministry of Justice	
Fund of Ukraine	gardens,	willistry of Justice	
Tulia di Oktaille	gardens,		

Figure 8: Example of Laws, bylaws and norms regulating urban greening projects in Kyiv

10. FORMATION OF THE URBAN GREENING BUDGET

Exact statistical data on the urban greening budget in Ukraine is not readily available. Based on the estimation of AURI, Ukraine's nursery association, the current market value for public and private urban greening projects together is approximately 100 mln Euro per year, split 50/50 between the two. The coming years this figure is expected to remain relatively stable. The budgets of city councils have grown significantly in recent years. After the decentralization of the disbursement of tax revenues since 2015 60% of taxes collected now stay on the local level. For Kyiv this is 40%. As a result spending on urban greening has grown significantly.

10.1 PUBLIC SECTOR BUDGET, INTERNATIONAL DONORS

From the previous it follows that the budget in the public sector currently amounts to approximately 50 mln. Euro per year. But a single urban greening budget does not exist. Funds made available for urban greening purposes originate on different levels:

- "Zelenbud". The management of "Zelenbud" prepares their yearly budgetary needs for the "Ecology department" of the City, which puts it up for discussion in the city council. In recent years it is often for the bigger part approved as submitted. Contrary to the period until 2014 when it was commonly cut to a minimum. The funds allocated to "Zelenbud" are on average spent 70% on salaries. With only 30% of the budget left for planting material, equipment, maintenance of buildings and greenhouses it is clear that they are on a tight budget. That could radically improve by rationalizing human resources. In many cities "Zelenbud" employs way too many people, often with low wages and qualification. As said before, 100 "Zelenbud" employees to 100 000 inhabitants is no exception. "Zelenbud" funds are mostly only used for maintenance of existing parks.
- Larger renovation projects of existing parks and the commissioning of new parks are lobbied
 for by council deputies, public activists and put up for discussion and approval by the city
 council. They can be funded from various sources such as the "Municipal development fund",
 the "Ecology Fund", the "Nature protection fund" or other special purpose funds depending
 on the nature of the project or who promotes it.
- Government institutions have budgets for the green areas around their facilities.
- State companies. Ukraine still has many state companies, some with sizable park areas for which budgets are available.

- Housing management companies. The majority of apartment buildings in Ukrainian towns are serviced by a regional "Keruyucha Kompaniya" A housing management company with a communal ownership form. Apartment owners pay a monthly fee for the maintenance of the building and the surrounding territory. The housing management company spends part of their budget on the green areas around the apartment buildings they service. In certain cases this budget is supplemented by "Zelenbud" for up to 30%.
- National Programs provide budgets (attract donors/sponsors) for the events like EURO 2012,
 EUROVISION etc. they are allocated for certain infrastructural objects in the host cities and coordinated both by central government and local authorities.
- Ukraine joins the international community in implementing the Sustainable Development
 Goals and the Green Deal tasks. The international programs that are implemented in Ukraine
 and increasingly include environmental components in cities and communities in their
 agenda. This contributes to raising the public awareness about the role of public greening in
 improving the living standards in the cities and settlements and creates the platform for the
 dialogue between authorities, civil activists, business, knowledge institutions and sector
 organizations.

The funds of International Financial institutions mainly aimed at the development of the strategies, visions, action plans, spatial planning for cities, training and educational programs for local communities. F.e. spatial planning for territorial communities (https://decentralization.gov.ua/en/news/12523), action plans towards realization of EU Green Deal (f.e. Eight ideas for "green" cities of Ukraine — a manual for communities https://decentralization.gov.ua/en/news/12821. Manual in Ukrainian). Donors also often support the individual initiatives of cities, like monitoring of the green plantations in Kropyvnytskyi.

<u>U-Lead</u> program in cooperation with <u>CAN-Actions</u> in 2020 implemented the educational program "Integrated Spatial Planning for Amalgamated Hromadas".

German-Swiss project "Integrated Urban Development in Ukraine II" 2019-2023 https://www.giz.de/en/worldwide/80902.html . The project works to improve living conditions in the cities of Vinnytsia, Chernivtsi, Poltava, Lviv, Zhytomyr, Kharkiv and Melitopol, and in Podil, a district of Kyiv. Together with international and national experts, it is helping to create the conditions for implementing integrated urban development policy by

consolidating and optimising urban management structures and procedures, and by planning urban infrastructure projects. A learning network enables people to share experiences and use these to improve the policy framework in the national political process. The project therefore also supports its partners in contributing to the 2030 Agenda, especially Sustainable Development Goals 9, 11 and 16.

The <u>EBRD Green City Program</u> by its name might suggest to promote urban greening projects, however its focus is mainly on other green issues. Cities that have signed up are Kyiv, Khmelnytskyi, Kryvyi Rih, Lviv, Mariupol. Among the top priorities specified by the city authorities for the action plans are: waste management, water purification, transport, city lighting. Urban greening will most likely only have a support role to the larger priorities.

The programme has three central components:

- 1. Green City Action Plans (GCAPs): Assessing and prioritising environmental challenges, and developing an action plan to tackle these challenges through policy interventions and sustainable infrastructure investments. Lviv was the 1st city in Ukraine to adopt the action plan by the city council in summer 2020. Kyiv is expecting the action plan by autumn 2021. The other cities are in the different stages of the development of their action plans.
- 2. Sustainable infrastructure investment: Facilitating and stimulating public or private green investments in: water and wastewater, urban transport, district energy, energy efficiency in buildings, solid waste and other interventions that improve the city's adaptation and resilience to climate shocks.
- 3. Capacity-building: Providing technical support to city administrators and local stakeholders to ensure that infrastructure investments and policy measures identified in GCAPs can be developed, implemented and monitored effectively.

Every city – participant has a working group devoted to the EBRD Green City. At the moment the cities are interested in consultancy and expertise for drafting the action plans and adjusting city strategies in the mentioned areas. Once the action plans are ready the investment potential for Ukraine will become clear.

10.2 PRIVATE SECTOR

Funding for urban greening in the private sector comes from various sources:

• Real estate developers. In spite of the Ukrainian economy's average performance, many new real estate projects are being commissioned. Most are high rise projects. As competition is fierce, well developed green surroundings can serve as a unique selling point. Progressive urban greening architects and real estate developers usually cooperate easily, although budget constraints often force projects to be scaled down from their initial concept.



Figure 9: Comfort town by Kan Development, Kyiv



Figure 10: Rybalski riverside development by Saga Development, Kyiv

Contrary to what might be expected real estate developers turned out to be the least accessible group during the course of this study.

• Private donors. It is not uncommon in Ukraine for wealthy individuals to make donations towards sizable urban greening projects. The challenge is often the legal framework and

approval procedures to channel these donations through. There are plenty of examples where this required such additional expenses that potential donors withdrew their offers.

An alternative to this are initiatives where citizens unite and collectively fund the (re)construction of parks in their neighbourhoods, as for example in Kyiv's Vozdvyzhenky quarter.



Figure 11: Citizens in Kyiv Vozdvyzhensky quarter have united in raising funds for their central park reconstruction

• Commercially exploited parks and gardens. These are few in Ukraine so far as it requires ownership of sizable land plots, but in coming years near the bigger cities some can be expected to appear. In Kyiv region Dobro Park opened in 2020. 40 hectares have been commissioned so far with over 200 hectares to follow in the coming years. Camelia Park is a project of flower producer and importer Camelia. The park is located in the Kyiv suburbs, it presents a selection of the assortment of the company and is open for the public from early spring to late autumn. In Kharkiv the largest private park is Feldman Ecopar k. It is a combination of a zoo and a Landscape park. It is open for people for free. In Dnipro the Gorban Pottery Park was created on the site of a former waste dump. This park and Private Park of Svitlana Kulbashna became the winners of a national landscape design competition.

11. CURRENT TRENDS

Various trends in urban greening are becoming apparent after the sector's development started to be stimulated by increased city council budgets.

11.1 SCORING POINTS WITH URBAN GREENING

City officials in large and small towns all have understood the power of urban greening. They have come to understand that it goes further than the actual need for green space, but that it is also about improving living conditions and stimulating economic activity in the area.

With city council budgets having grown significantly citizens expect to see where the money goes. Until recently relatively little money was spent in urban greening. Thus, there is a lot of catching up to do. This for the time being creates an easy opportunity for local politicians to score points. Nice park equals happy voters and a visible explanation of where part of the taxpayers money is spent. Most agree that the populism factor plays a significant role. Election years are years with more than the average number of parks and infrastructure projects being commissioned across Ukraine.

11.2 QUALITY VS. TICKING THE BOX

More and more often the first step in new projects is a public tender where urban landscape architects are invited to develop an integrated concept. It is not uncommon however that the winning proposal is tuned down for budgetary reasons or, as several architects have stated, lack of understanding by city officials. Fortunately, there is a general trend of project quality increasing. Some cities are doing better here than others. Taking into account that the trend of increased spending and to seriously address urban greening is recent, this does give confidence in the further raising of the standards in the sector and the right priorities being set.

11.3 3-D MODELING

Ukraine has a large IT industry. This ensures that 3-D modelling specialists are plenty and relatively affordable. Many projects are now developed using 3-D modelling. Also for conservative "Zelenbud" it has nearly become standard practice. In the appendix to this study some links are included to 3-D video presentations for projects that are currently in the planning phase by "Zelenbud".

11.4. INTEGRATED APPROACH

All parties involved are aware of the need for an integrated approach to urban greening and the benefits it can bring. Progress is being made in this field, but many would like to see it go faster. The biggest obstacle here is the current legislation where contradicting laws and norms, and some fields being not regulated at all, often still make the implementation of integrated concepts too much of a challenge. But also here progress is expected as new coherent legislation is under development and participants in the parliament committee to whom this task is assigned are confident that their work will bear fruit and that in the near future it will be adopted.

11.5 NEW PLANT VARIETIES VS TRADITIONAL PLANTING MATERIAL

Before the recent boom urban greening projects were characterized by a traditional approach to planting material used. Commonly used were Marigolds, Matthiola, Antirrhinum, Phlox, Aster, Chrysanthemum, Siren trees, Birch trees, Chestnut trees and various types of pine and conifer trees.

Ukrainian nurseries however are offering a variety of planting material that matches that of their colleagues in the Netherlands. Not surprising, as the majority of their assortment is being imported from the Netherlands, Belgium and Germany. Before new varieties came to be in demand for urban greening projects Ukrainian nurseries have gained a lot of experience already in the private landscaping sector. Wealthy Ukrainian clients have boosted the development of local nurseries and their assortments for the last decades by commissioning private, often large, projects based on the latest international trends.

The current challenge is to get the public sector in line with the private sector. Already this is happening. In urban greening projects there is a definite trend in using more perennial plants, decorative grasses, all kinds of imported alley trees and hedge plants like Cotoneaster, Ligustrum, Berberis.



Figure 12: Trending planting material in urban greening.

11.6 COMPETITION

Dutch exporters of planting material have a good reputation in Ukraine. Many of them already have a stable client base in Ukraine and represent on the market via their local partners (see Appendix 20.1). Competition for the products offered from The Netherlands comes mainly from Polish and Belgian nurseries. They mostly compete on price. Polish suppliers have the advantage of being geographically closer. Also communication is easier because of the similar language and culture. The added value that Dutch business needs to offer lies in offering conceptual approaches with a strong training component aimed at familiarizing market players with the advantages of new products and concepts offered.

12.MAJOR PUBLIC PARKS RECENTLY COMMISSIONED

Participants in the urban greening sector consistently mention a few projects recently completed as the best indicators that urban greening in Ukraine finally has taken off. Each of these projects are multimillion Euro projects in which additional investments will be made for years to come.

12.1 KHARKIV

Kharkiv is the second largest city in Ukraine and the biggest spender on urban greening. It has many public parks, the most famous is <u>Gorki park</u>. It has a 100 year history and covers 130 hectares. The park has undergone a major overhaul for EURO 2021, when Kharkiv was a host city for the games of the Dutch football national team. The estimated amount spent for reconstruction of the park during the last few years is not less than 30 million Euro. The yearly maintenance budget is estimated to be several million Euro.





Figure 13: Kharkiv, Gorki Park

12.2 MARIUPOL

Mariupol is a major Eastern Ukrainian industrial city on the frontline of the Ukrainian-Russian conflict. In order to give the city's population confidence and improve their well-being the city heavily invests in its infrastructure and urban greening. These projects are for a large part funded by special funds from the national government.





Figure 14: Mariupol city park

12.3 LVIV

Lviv is the largest city in Western Ukraine. It has 800 hectares of public parks. Only in 2020 the amount of 2,5 million Euro was spent on reconstruction of parks. Lviv has one of the most lean, progressive and transparent urban greening policies in Ukraine. Notably, "Zelenbud" in Lviv relative to the city's size has 75% less employees on its payroll than Kyiv does.





Figure 15: Visualizations of the Bilogorsha and "700 year Lviv" parks

12.4 NATALKA PARK, KYIV

Kyiv has many parks and is generally a green city with forest areas stretching into the city boundaries. It's most noteworthy recent urban greening project is Natalka park in Kyiv's Obolon riverside district. The project has also the longest planning history with initial planning starting in 2005. Parts of the park are still under development. According to the chief architect of "Zelenbud" in Obolon district the design of the park is the result of combining input from many sides. Local citizens, in-house "Zelenbud" architects, several external urban greening architects, personal ambitions from different Kyiv city mayors, all have had their say in Natalka park's design. In order to have different concepts and ambitions accommodated the park is divided in different sections each with their own character. Completion of the park faced additional legislative challenges due the fact that the park is a waterfront location.





Figure 16: Natalka Park Kyiv, Obolon

13. COMMERCIAL PARKS, AN EXAMPLE: DOBRO PARK

Private investors and sponsors find it difficult to agree with city councils when they plan to invest or contribute in urban greening projects. Some then choose to implement their projects on privately owned land, but examples of this are few. One recent addition is Dobro Park. After having unsuccessfully lobbied the Kyiv city council for several years with various proposals for the private (co)financing of the modernization of one of Kyiv traditional parks, local entrepreneur lgor Dobrutski took the initiative in his own hand and created a commercial park. In 2020 he opened Dobro Park. It is located 20 Km west of Kyiv. So far 40 hectares have been commissioned, in the years to come the project aims to cover over 200 hectares with multiple natural lakes. The concept is a combination of a landscaped park in attractive natural surroundings with a large variety of imported plants and trees and various leisure functions including camping, festival sites, food corners etc.. With leisure options around Kyiv relatively few for a city over 3,5 million inhabitants the Dobro Park business case looks viable. It's expected the success could see similar, but smaller scale, projects near other big Ukrainian cities.



Figure 17: Dobro Park fields, near Kyiv

14. ROOFTOP/VERTICAL GREENING

Rooftop and vertical greening are new arrivals in Ukraine, but landscape architects and nurseries confirm that in the last few years there is an increasing interest with many projects that have been realised and new ones in the planning phase. In the new urban greening legislation that is under development rooftop and vertical greening are expected to be addressed separately with

clauses that should stimulate its development. It is seen as one of the tools to improve living conditions in Ukrainian city environment. Most realized projects so far can be found in Kyiv.



Figure 18: Pechersk hills. www.landscaping.kiev.ua

Shortly there will be a new addition to the scene as Kyiv's land mark high rise project currently under construction, <u>Taryan Towers</u>, is to have a full size rooftop garden.



Figure 19: Taryan Towers, Central Kyiv.

Some urban greening architects specifically advertise themselves in the sphere of rooftop and vertical greening.

15. THE DECISION MAKING PROCESS IN THE PUBLIC SECTOR

The decision making process in the public sector is not clear cut, because there are many parties involved. The initiative is mostly taken by the city councils, whereas the quality of the implementation of the projects often depends on the degree to which citizen activists, local entrepreneurs and professional landscape architects are successful in having their vision taken into account.

After initial approval for the development of an urban greening project it has to be decided from which funds it will be financed. Subsequently a city council deputy will be appointed, or one of the relevant city council's executive bodies, who will become responsible for the implementation of the project. Contrary to what would seem logical, final responsibility is often not assigned to "Zelenbud", but to a project management company. This company then becomes responsible for holding tenders for design, construction and managing the implementation of the project with the appointed city council representative or executive body only having a supervisory role.

16. THE "PROZORRO" PUBLIC TENDER SYSTEM

All contracts for purchases by governmental organizations have to be tendered through the online public tender platform "ProZorro" (https://prozorro.gov.ua/en) (<a href="https://prozorro.gov.ua/en) (<a href="h

The "ProZorro" system allows participation of Ukrainian and foreign legal entities. However, for a foreign company to participate it should satisfy a large number of requirements. This means that it is common practice, at least in the urban greening sector, for foreign suppliers to participate through their local distributors. Once a company is registered in the system, tender preferences, using the relevant codes, can be marked and upcoming tenders are automatically forwarded.

Participation in "ProZorro" requires a very detailed approach. The bigger Ukrainian nurseries have dedicated managers that only deal with tenders on the "ProZorro" platform. In case nurseries do not have the resources to manage the tender process and procedures it is common that an intermediate company is hired. For this reason little known companies can show up in the "ProZorro" database as winners of urban greening tenders where the actual suppliers are well known nurseries.

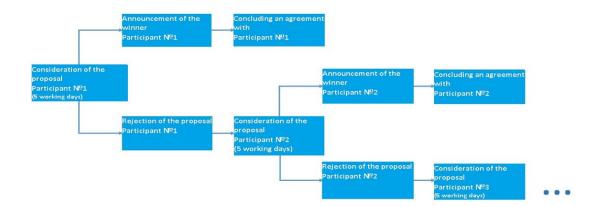
"ProZorro" has an open bidding procedure that can be divided into several stages:



Figure 20: "ProZorro" procedures. Bidding procedures and decision making process(bottom page)

In the first stage tender proposals can be submitted. This is also the stage for getting clarifications and making suggestions. This means that from the first day and during the entire bid submission stage, suppliers can suggest changes to the announcement and tender documentation. Suppliers can make proposals and contact the customer with questions except for the last 10 days. Also, starting from the start bidding date and ending 4 days before the bidding deadline any registered user of the "ProZorro" platform (except for customers) can file complaints about the tender terms.

A tender is automatically blocked and does not move to the next stage if at the end of the bidding period there are some questions left unanswered by the customer. If less than two suppliers have submitted tender proposals the tender procedure is cancelled and the fee for participation is returned to the supplier. At the stage of disclosure the customer considers the submitted proposals:



The winner of the procurement procedure within a period of ten days from the date of publication in the electronic procurement system must provide the customer with the required documents by uploading them in the electronic procurement system.

Within one day from the date of the decision to enter into a contract the customer publishes its decision in the procurement system. After that not earlier than 10 days from the date of publication, but not later than 20 days the contract must be signed and uploaded into the system. In case of justified necessity, the term for concluding the contract may be extended up to 60 days.

A tender procedure is cancelled if at any of the stages there were one or more violations according to article 32 of the Law of Ukraine "On Public Procurement".

In the table on the next page an overview of the total value of tenders in major Ukrainian cities, for "Services on landscaping and maintenance of greenery", as provided by the freely accessible online "ProZorro" database. These are amounts that apply only to one of several codes used for urban greening tenders.

City	year		Euro	Euro
Kyiv	2020	-	80583	
	2019		740078	
	2018		4607905	
				5428566
Lviv	2020		725000	
	2019		264500	
	2018		52394	
				604951

Ivano Frankivsk	2020	225116	
	2019	123498	
	2018	33711	
			382325
Khmelnitski	2020	7913	
			7913
Rivne	2020	534508	
	2019	180736	
			715244
Zhytomyr	2020	84488	
			84488
Odesa	2020	441981	
	2019	91095	
	2018	64051	
			597127
Kherson	2020	25981	
	2018	29310	
			55291
Mikolaiv	2020	555624	
	2019	67035	
			622659
Mariupol	2020	7826635	
	2019	1387365	
	2018	5999176	
			15213176
Kropivnistki	2020	147581	
	2019	83162	
			230744
Zaporizhzhe	2020	2874090	
	2019	10177	
	2018	105397	
		,	2989663
			======

City	year	Euro	Euro
Cherkasy	2020	212155	
	2019	582496	
	2018	35085	
			829737
Dnipro	2020	5175177	
	2018	473467	
			5648644
Kharkiv	2020	2377737	
	2019	450317	
	2018	51049	
			2879103
Poltava	2020	9316	
	2018	16153	
			25468
Chernigiv	2020	153467	
	2018	8668	
			162135
Total			36477236

Figure 21: "ProZorro" tender values for "Services on landscaping and maintenance of greenery"

The table above only gives an indication of the **relative size** of the urban greening budgets in the various cities. The total purchase amount through "ProZorro" under all codes combined for urban greening is a manifold of the example given.

17. IMPORT REGULATIONS FOR PLANTING MATERIAL

Custom codes for import in Ukraine are applied according to the Ukrainian Classification of Goods for Foreign Economic Activity (UCGFEA) which is based on the Harmonized Commodity Description and Coding System (the international nomenclature of goods developed by the World Customs Organization). Documents required from the exporter are listed based on the exact code that applies. For most products at least the following documents are required, besides the commercial invoice and CMR. A sample copy of each document can be found in the appendix:

- Phytosanitary certificate. Straight forward as required for any export transaction
- Certificate of analysis. This document can be issued by the exporting company itself
- Certificate of quality. This document can be issued by the exporting company itself
- EUR1 . This certificate allows duty free import under the EU-Ukraine free trade agreement.
 Without this certificate import duties could be between 5 and 15%, depending on the product category.
- Confirmation of varietal purity by NAK Tuinbouw. This is the most questionable document required, but without it Ukrainian customs will not clear the goods under standard procedures. The requirement stems from contradictory Ukrainian legislation which results in all planting material imported needing a listing in the Ukrainian register of planting material varieties (https://sops.gov.ua/reestr-sortiv-roslin). This for many exporters is an impossible requirement to fulfill because of the lengthy procedures involved through the Ukrainian Institute for Plant Varieties Examination. An accepted alternative for decorative planting material in many cases is a declaration from The Netherlands Inspection Service for Horticulture(NAK Tuinbouw). As this document does not automatically show in the NAK Tuinbouw list of documents required for export to Ukraine it usually takes some explanation to obtain it.

Dutch exporters should pay careful attention to the preparation of the needed export documents. The instructions of the Ukrainian client importer should be followed strictly to make sure that all applicable rules and procedures are taken into account and that no CSR issues arise. It is advisable to have the full set of export documents checked by a Ukrainian custom broker before the goods are put on transport.

18. ENTRY INTO THE UKRAINIAN URBAN GREENING MARKET

Given the complexity of the local regulatory framework, the approval and control procedures, it is challenging for foreign companies to enter the Ukrainian market for urban greening goods and services. Suppliers from Western Europe also have to be well aware of the climate difference. Ukraine's climate is a drier one with more extreme temperature differences. The fact that the majority of supplies to urban greening projects already comes from The Netherlands, Belgium and Germany shows that the market is wide open to those that take the effort. The added value that Dutch business needs to offer lies in offering conceptual approaches with a strong training component aimed at familiarizing market players with the advantages of new types of planting material and concepts offered Important challenges to overcome are a high level of bureaucracy and complicated import procedures. Although a premium price can be charged for higher quality products the market is very price sensitive. Successful market entry depends on a solid preparation. Then, on building local partnerships with Ukrainian partners (agents /dealers /importer) and with other Dutch companies already working in the market. Useful information can be found also on the RVO site, doing business in Ukraine; sector developments and stakeholders. Based on the information gathered during this study companies entering the market will be most successful when using the guidelines that follow.

18.1 OPPORTUNITIES

There is a clear opportunity for companies that offer perennial plants, decorative grasses, alley trees and hedge plants, specifically those varieties that are suitable to Ukraines relatively dry climate. Demand for irrigation technology and technology for rooftop and vertical greening will be increasing the coming years and thus the opportunities for companies active in this field. International landscaping architects will find it harder to compete, but can be successful when teaming up with local urban architects. Specifically their input will be considered valuable when they can assist in helping develop integrated approaches to urban greening projects where local priorities can meet the interest of the Dutch business.

18.2 PARTNERSHIPS WITH LEADING UKRAINIAN NURSERIES

Given the complexity of the market, the Dutch exporters will have to build partnerships with local nurseries. Mostly it will be young Dutch planting material grown to maturity over a 1-3 year period before being supplied to urban greening projects. More exclusive mature material will be supplied directly from The Netherlands for specific projects. The Dutch side has to be willing to

invest significantly in promoting their product in the market together with the Ukrainian nurseries. As the knowledge level in the market is generally high, preparation has to be solid. Participation in the yearly events of the sector association AURI will give good exposure to a wide range of sector players, including "Zelenbud" architects and management from across Ukraine. It will be the nurseries with whom Dutch suppliers have partnered that will be able to participate in urban landscaping tenders through the nationwide "ProZorro" tender platform. Also, the local nurseries will be able to give guidance to import procedures.

While selecting local partners common practices apply in order to check their financial solvency and due diligence. For screening Ukrainian partners the following on-line resources can be used:

- Ministry of justice of Ukraine https://usr.minjust.gov.ua/content/free-search;
- Commercial due diligence services based on open data resources https://youcontrol.com.ua/en/ and https://opendatabot.ua/en/.
- A company check on payment history can be done by Ukrainian Chamber of Commerce
 https://ucci.org.ua/en/services/vniesiennia-do-rieiestru-nadiinikh-partnieriv or by legal
 companies working in Ukraine.

Online resources aside, the best way to screen potential partners is practical references from the many Dutch, foreign, players already working on the market. It also has to be taken into account here that it is quite common in Ukraine for a company to split their financial transactions over several legal entities. Thus information in online resources might not present the full picture.

18.3 COOPERATION WITH LOCAL LANDSCAPING ARCHITECTS

For entry onto the Ukrainian market cooperation with the main Ukrainian landscaping architects association GLAU (http://glau.com.ua/en/) will be an effective tool. Specialized urban landscaping architects are still relatively few and are listed separately in the appendix to this study. They can easily be contacted directly. Knowledge of English in this selected group is generally sufficient.

18.4 "FLOWER EXPO UKRAINE" EXHIBITION / SECTOR CATALOGUE

Ukraine has the only annual horticulture exhibition that has national exposure, "Flower Expo Ukraine". It is a key event for the floricultural, ornamental and greening sector as well as for florists, designers and architects. The expo gathers participants from all over the world (with

majority from the Netherlands). The exhibition is also an excellent networking platform. The organizer of the event is the Dutch Company Nova Exhibitions. (www.flower-expo.ukraine.com)

Another effective marketing tool is the annual Ukrainian "Garden Industry" catalogue. It has a printed and online version (www.gardenindustry.org).

18.5 TRAINING FOR ZELENBUD LANDSCAPING STAFF

Decisions on public urban greening projects are made by city councils, but "Zelenbud" landscaping architects play an important role in guiding the decisions on planting material and project concepts. During this study it has been frequently underlined that training and seminars for this group is an effective tool to promote new types of planting material and urban greening concepts. The management of "Zelenbud" is genuinely open to supporting initiatives from Dutch suppliers. Material and information during seminars should be developed taking into account that in general the audience will already be well aware of many topics. There is a need for specific information, with plenty of examples of the effectiveness and results of suggested materials and concepts. Video presentations are preferred. Online seminars are a tool that is also already commonly used.

Besides increasing the knowledge level of "Zelenbud" architects, training of "Zelenbud" field staff should be a focus point. This group should receive training in planting and maintenance of existing and new tree and plant varieties, it is important to make them familiar with modern and more efficient practices.

18.6 FOCUS REGIONS

From this study it is clear that the market for urban greening input materials is developing nationwide. On which region to focus depends on many factors, but it is important to realize that attention should not be limited to the capital city Kyiv and that efforts directed to Ukrainian regional cities may result in success faster than in Kyiv due to the efforts that need to be made to navigate the capital's bureaucracy. Dnipro, Kharkiv, Cherkasy, Lviv and other major Western Ukrainian cities, Mariupol and Zaporizhzha are all cities with significant urban greening budgets that offer plenty of business opportunities for companies in the urban greening sector.

18.7 COOPERATION WITH COMMERCIAL PARKS

In order to get quick exposure in the Ukrainian market a demo project in cooperation with a commercial park is an option worth considering for a new entrance to the market. Decisions can be made quickly, communication will be clear and to the point. Potential partners and clients will have easily accessible local reference to new products being offered.

19 DUTCH GOVERNMENT SUPPORT

Government support programs for Dutch exporters as offered by Dutch Enterprise Agency (RVO - www.rvo.nl) the PIB and DHI programs, can significantly strengthen the position of Dutch exporters on the Ukrainian urban greening market. When structured correctly these programs can also deliver a positive impact on the development of the sector as a whole in Ukraine by sharing international experience in urban greening and increasing the knowledge level of all parties involved. Essential elements would have to be:

- G2G: New legislation is key to sustained development of the urban greening sector. Part of
 any government support program should be support of the development of new legislation.
 The parliamentary committee in charge of this topic has indicated the interest in cooperation
 with the Netherlands and applying the Dutch expertise.
- B2B: Seminars and roundtable meetings with urban greening architects and nurseries
- K2K: Facilitation of cooperation between Dutch and Ukrainian universities in the urban greening sphere.
- Support of demonstration projects displaying planting materials and technology from The Netherlands. In the course of this study several offers were made by Ukrainian counterparts for joint Dutch-Ukrainian demonstration projects.

20. APPENDICES

20.1 UKRAINIAN NURSERIES

Name and region	Website	E-mail	Description
Kyiv			
Agrus	www.agrus.ua	shop@agrus.ua	Conifer trees, roses and berries
Artlandiz	www.artlandiz.wix.com/ derevo	artlandiz@gmail.com	Leafy shrubs: spirea, turfgrass, vesicles, barberries.
Biosphera	www.biosphere.com.ua	Biosfera-L@ukr.net	Landscaping services
Botanic Garden	www.botaniq- garden.com.ua	tree.garden.ua@gmail.com	Ornamental plants
Demetra	www.demetra.com.ua	mail@demetra.com.ua	Fruit, berry and ornamental plants
Dalas	www.dalas.com.ua	zakaz@dalas.com.ua	ornamental plants
Eva Sad	www.evasad.com	info@evasad.com	Conifer and leafy trees, perennials, shrubs, aley trees, landscaping services
Green hutor	www.greenhutor.com	greenhutor@gmail.com	Leafy and conifer trees
Greenmart	www.greenmart.com.ua	info@greenmart.com.ua	Hedge plants; plants for urban landscaping, conifer and evergreen trees, roses, perennials

Lizgard	www.lizgard.com.ua	lizgard@ukr.net	leafy and conifer trees plants, perennials and groundcovers.
Lotos K	www.lotosk.com.ua	lotosk.sales@gmail.com	Ornamental plants from Holland and Germany, as well as own production
MegaPlant	www.megaplant.ua	office@megaplant.ua	Conifer and leafy trees ,shrubs
Natalis	www.natalis.ua	natalis.garden1@gmail.com	Conifer and leafy trees and shrubs, perennials, hedge plants
Plodovi Krupnomer	www.plodkr.com.ua	litvavita@gmail.com	Seedlings of fruit trees and shrubs
Priroda	www.priroda.kiev.ua	info@priroda.kiev.ua	Leafy and conifer trees, perennials, azaleas, rhododendron s, ground cover and climbing plants
Proxima	www.proxima.net.ua	manager.proxima@gmail.com	Conifer trees, evergreen trees and shrubs for hedges
Roslinniy bum	www.rosbum.com.ua	roslinniybum@gmail.com	Perennials - flowering shrubs and trees
Sadco center	www.sadco.com.ua	sad_co@ukr.net	Ornamentals

Solnce cvet	www.solncecvet.com.ua	andriivoitko777@gmail.com	Perennials and ground cover,
			hosta, astilbe, sedums, irises,
			echinacea,
			ornamental
			grasses
Svit roslyn	www.svitroslun.com.ua	sv.roslin@ukr.net	Leafy and and
			conifer trees
Tsents gazonnih	www.kvint.com.ua	kvint@ukr.net	lawn grass
trav			seeds
Vodospad	www.vodospad.com	garden.catalogue@gmail.c	Production of
		om	ornamental
			plants
Zelena Kraina	www.zelenakraina.com.u	zelenakraina@gmail.com	Conifer and
	a		leafy trees,
			landscaping services
Sumy			services
Fastivez	www.facebook.com/gard		Conifer and
1 4361462	enfastives/		leafy trees
Dnipro			
Garden center	www.dvorik.ua	dvorik2017@gmail.com	conifers and
Dvorik			leafy plants,
			bulbs
Kvitana	www.kvitana.com.ua	<u>Pitomnik-Kvitana@mail.ru</u>	Ornamental
			plants.
Ozelenitel	www.ozelenitel.prom.ua	ozelenitel1@ukr.net	Conifer and
Cod wook of manii			leafy trees
Sad vashoi mrii	www.garden.dp.ua	om17.garden@gmail.com	Conifer and leafy trees,
			alley trees,
			perennial
			flowers and
			ornamental
			grasses
Spassky nursery	www.spsad.com.ua	garden@spsad.com.ua	Conifer and
			leafy trees,
			ornamental
			grasses,
			annual and
			perennial
Mahan			flowers
Volyn	www.galavin.com.ua	sad galavin@gmail.com	Conifer and
Galavin	www.galavin.com.ua	sad.galavin@gmail.com	leafy trees
			reary trees

Zaporizhzhya			
Rostok garden center Chernivtsi	www.sadrostok.in.ua	rostok.melitopol@ukr.net	Conifer and leafy trees roses, perennials, vines, flower bulbs, lawn grass seeds
Euro Plants	www.europlants.com.ua	europlants.cv@gmail.com	Flowering
Laro Flants	www.caropiants.com.aa	curopiants.ev@gman.com	shrubs, conifer and leafy trees
Lviv			
Berezhnjuk	www.berezhnjuk.com.ua	salesberezhnjuk@ukr.net	Conifer and leafy trees
Elit Flora	www.elitflora.ua/ru/glav naya	e_flora@ukr.net	Conifers trees, alley trees
Plants Club	www.plants-club.ua	site@plants-club.ua	Conifer and leafy trees, shrubs, grasses, alley trees
Odesa			
Florai	www.florai.com.ua www.sadproekt.com.ua	flora-export@ukr.net sadproekt.bb@gmail.com	Import from the best nurseries in Italy, Germany, Poland, Holland Conifer and leafy trees and
			shrubs, perennials
Transcarpathian			
Green Angels	www.landshaft.info	sale.landshaftinfo@gmail.c om	Conifer and leafy trees
Mala Hollandiya	www.malahollandiya.co m.ua	I.holland@i.ua	Conifer and leafy trees
Vinnytsia		anlan Ordal I i di i d	Duna di atta C
Deko Plant	www.dekoplant.com.ua	sales@dekoplant.com.ua	Production of rose seedlings

Vlasov	www.vlasov.net.ua	info@vlasov.net.ua	Conifer and leafy trees
Zhytomyr			
Kornelis	www.kornelis.biz	kornelis.dv@gmail.com	Conifer and leafy trees, shrubs
Poltava			
Gardi	www.gardi.biz	nursery@gardi.biz	Conifer and leafy trees, shrubs
Kharkiv			
Agroflora	www.agro-flora.com/	agroflora24@ukr.net	Conifer and leafy trees, perennial plants, shrubs
KLS	www.lands-studio.com	plants.kharkov@ukr.net	Conifer and leafy trees
Ivano-Frankivsk			
Plantasfera	www.plantasfera.com	plantasfera@gmail.com	Ornamental plants and trees

20.2 LEADING URBAN GREENING ARCHITECTS

Name	Website	E-mail
S3t	www.s3t.com.ua	info@s3t.com.ua
Di-Line	www.di-line.com.ua	di-line@ukr.net
Kotsiuba	www.kotsiuba.com	office@kotsiuba.com
Greengarth	www.greengarth.com.ua	greengarth.ua@gmail.com
Treeland	www.treeland.com.ua	treeland@i.ua
Virs	www.virs.ua	info@bipc.com.ua
Landproject	www.landproject.com.ua	office@landproject.com.ua
Eva Sad	www.evasad.com	info@evasad.com
Aer	www.aer.ua	bureau.aer@gmail.com
Topiar	www.topiar.ua	director@topiar.com.ua
Vishukane Sadivnitstvo	www.landscaping.kiev.ua	greenplus@ukr.net

20.2.1 ROOFTOP AND VERTICAL GREENING

Green Cascade	www.greencascade.com.ua	info@greencascade.com.ua
Zeleney	www.zeleney.com	info@zeleney.com
Green Walls	www.greenwalls.com.ua	info@greenwalls.com.ua
Modaflora	www.modaflora.com.ua	modaflora2016@gmail.com

20.3 "ZELENBUD" IN MAJOR UKRAINIAN CITIES

City	Website	E-mail	Phone
Kyiv	www.kyivzelenbud.com www.facebook.com/zelenbud	info@kyivzelenbud.com	+380442726182
Kyiv , Darnytskyi district	www.darn.kyivzelenbud.com	kpuzn_dar@ukr.net	+380445660003
Kyiv, Desnianskyi district	www.desna.kyivzelenbud.com	kpuzn07@gmail.com	+380443373501
Kyiv, Dniprovskyi district	www.dnipro.kyivzelenbud.com	dniprouzn@ukr.net	+380445948200
Kyiv, Holosiivskyi district	www.golos.kyivzelenbud.com	kpyzngol@bigmir.net	+380442575055
Kyiv, Obolonskyi district	www.obolon.kyivzelenbud.com	kp_po_uzn@ukr.net	+380444186149
Kyiv, Pecherskyi district		kp_uzn_pr@ukr.net	+380442848699
Kyiv, Podilskyi district	www.podol.kyivzelenbud.com	podilzelenbud@ukr.net	+380444683212
Kyiv, Solomianskyi district	www.solom.kyivzelenbud.com	skzbud@ukr.net	+380444975077
Kyiv ,Sviatoshynskyi district	www.svyatosh.kyivzelenbud.com	kpuzns@ukr.net	+380444001994
Kyiv ,Shevchenkivskyi district	www.shev.kyivzelenbud.com	kpuzn@ukr.net	+380444556455
Chernihiv	www.zelenbud.cn.ua	zelenbud@ chernigiv-rada.gov.ua	+380462238038
Zhytomyr		zelenbud2008@ukr.net	+380412554530
Kharkiv	www.zelenbud.kh.ua	khzelenbud@ukr.net	+380577010309
Vinnytsia	www.vinzelenbud.com.ua	zelenbud.vin@i.ua	+380432577007
Dnipro		budzelen33@i.ua	+380980367305
Zaporizhzhia		reception.zs@zp.gov.ua	+380617642445
Lviv	www.city-adm.lviv.ua/ lmr/utilities/lkp-zelenyi-lviv	zelenbud_lviv@ukr.net	+380322344718

20.3.1 "ZELENBUD" 3D MODELINGS SAMPLES

Holosiivskyi park, Kyiv	www.facebook.com/zelenbud/posts/3366842150053030
Zhandarka lake, Kyiv	www.facebook.com/zelenbud/posts/4189816764422227

20.4 SECTOR ASSOCIATIONS+CATALOGUE

Name	Website
Guilde of Ukrainian Landscape Architects	www.glau.com.ua
Association of Ukrainian Landscape Architects	www.alau.in.ua
Ukrainian Plant Industry Association	www.auri.org.ua
Landscaping industry catalogue	www.gardenindustry.org

20.5 PUBLIC ORGANIZATIONS AND CIVIL ACTIVISTS

Name	Website
Eco Club Ukraine	www.ecoclubua.com
Citizen Budget / Hromadski Budget	https://budget.e-dem.ua/landing
Urban Crew	https://www.facebook.com/kyivurbancrew
National Ecological Centre of Ukraine	www.necu.org.ua

20.6 URBAN GREENING SERVICES

Name	Website
Digital catalogues of trees in urban areas	https://inspectree.net/
Aerial and satellite imaging of urban areas	www.drone.ua/green-zones

20.7 URBAN LANDSCAPING COURSES AND TRAINING PROGRAMS

Name	Website
Kyiv university of technology and design	www.knutd.edu.ua
National University of Life and	www.nubip.edu.ua
Environmental Sciences of Ukraine	
Institute of Biology and Medicine,	www.biology.univ.kiev.ua
Taras Shevchenko National University	
Private courses	
European design school	www. eds.ua

20.8 MAJOR REAL ESTATE DEVELOPERS

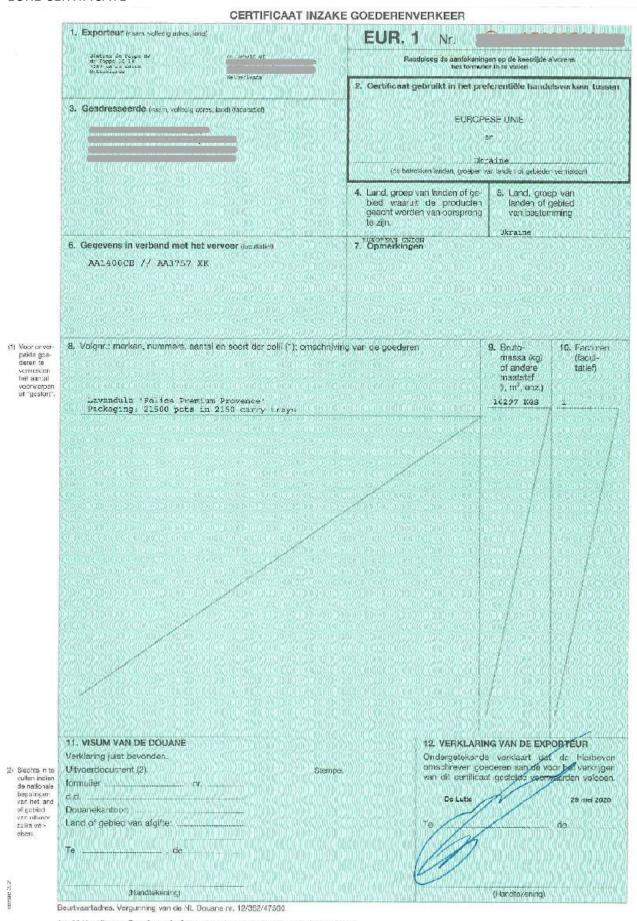
Name	Website
Kan Development	www.kandevelopment.com
Saga Development	www.saga-development.com.ua
UDP	www.udp.ua
Taryan Group	Taryangroup.com

20.9 REQUIRED EXPORT DOCUMENTS

PHYTOSANITARY CERTIFICATE



EUR1 CERTIFICATE



Art. 3342 - Ultgave Beurtvaartadres www.beurtvaartadres.nl - Tel. 088-55 22 111

CERTIFICATE OF ANALYSIS

Company Address	
VAT-number:	
Chamber of commerce:	Date

CERTIFICATE OF ANALYSIS OF PLANTING MATERIAL

Invoice №:

Beneficiary in Ukraine Name and address of the company

Batch number	Species	Cultivar	Purity	Country of origin
115	Lavandula	Felice Premium Provence	100%	The Netherlands

The company-producer xxxxxx is registered as a company of Naktuinbouw since xxxx under number NL-xxxxxx Company xxxx is under the control of the Naktuinbouw inspection system and is continuously monitored by Naktuinbouw. The quality and varietal purity of the planting material is controlled during official inspections.

CERTIFICATE OF QUALITY

Name of a company Address VAT-number: Chamber of commerce:

CERTIFICATE OF QUALITY

Country of destination: Ukraine

Exporter: xxxxx

Date:

Herewith, **company xxxxx** declares that the quality of plants Lavandula "Felice Premium Provence", shipped by xxxxxxxxxx under contract № xxxxx dated xxxxxx and Invoice № x dated xxxxxx, corresponds to all phytosanitary and varietal quality norms applicable to plants according to EU and Dutch legislation.

The Netherlands Inspection Service for Horticulture (Naktuinbouw), charged by the Dutch government with the official quality control of seeds and plants of horticultural crops in the Netherlands. The company-producer xxxxx is registered as a company of Naktuinbouw since (xxxxx) under number NL-xxxxxxx.

Company xxxxx is under the control of the Naktuinbouw inspection system and is continuously monitored by Naktuinbouw. The quality and varietal purity of the planting material is controlled during official inspections.

Name, signature Stamp of the company



To the attention of the custom authorities of Ukraine

18 May 2020

Herewith we,

the Netherlands Inspection Service for Horticulture (Naktuinbouw), charged by the Dutch government with the official quality control of seeds and plants of horticultural crops in the Netherlands declare, that

is registered as a company of Naktuinbouw since (9 April 2008) under number NL-

is under the control of the Naktuinbouw inspection system and is continuously monitored by Naktuinbouw. The quality and varietal purity of the planting material is controlled during official inspections.

Registered companies are as such bound to follow the regulations and instructions of Naktuinbouw and are to refrain from all acts resulting in violation of the legal obligations concerning the scope of Naktuinbouw.

R.A. The Bleijswijk. Head of Inspection

Naktuinbouw Quality in Horticulture
Sotaweg 22, Postbus 40
2370 AA Roelofarendsveen
The Netherlands
T +31 (0)71 332 62 62

F +31 (0)71 332 63 63 info@naktuinbouw.nl www.naktuinbouw.eu

20.10 MAJOR DUTCH NURSERIES EXPORTING TO UKRAINE

Agro-NI	www.agro-nl.nl
Hoogenraad	www.hooogenraad.nl
Lodders	www.lodders.nl
Twente Plant	www.twentheplant.nl
Ebben	www.ebben.nl
Gelderplant	www.gelderplant.nl
Broeren	www,boomkwekerijmbroeren.nl
Dutch Royal Boskoopo Horticultural society	www.kvbc.nl
Vakbeurs Groot Groen	www.grootgroenplus.nl
FLOWER BULBS	
Stokolex	www.stokolex.com
Amsonia	www.amsonia.nl
Langedijk	www.langedijk.nl
Haakman	www.haakman.nl

See also: Market Study: Ukrainian floriculture and ornamental sector implemented in 2019.

The main objective of the study is to obtain information and insight on the floricultural and ornamental sector of Ukraine, its development, business opportunities and challenges.

The study describes current situation on the market of flowers and ornamental plants in Ukraine, defines key players in each product group, analyzes current legislation including land market, registration of varieties, protection of the breeders' rights, etc, analyzes available statistic data on international trade of Ukraine in flowers, ornamental plants and planting material, distinguishei possibilities for market development in Ukraine, defines opportunities and challenges for Dutch-Ukrainian cooperation.

The product groups analyzed in the study: cut flowers, planting material (seed, bulbs, seedlings), potted plants (indoor), ornamental plants (shrubs, trees and other plants for landscape design).

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