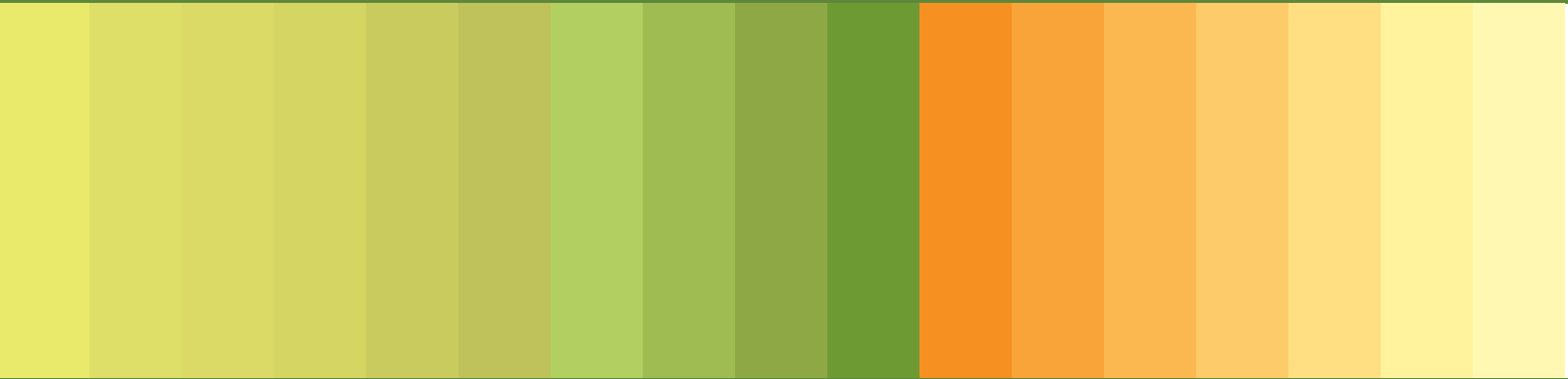




CANADIAN AGRICULTURAL
HUMAN RESOURCE COUNCIL

CONSEIL CANADIEN POUR LES
RESSOURCES HUMAINES EN AGRICULTURE

Developing a National Occupational Standard (NOS) and Learning Tools



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Introduction and Background:

The development of National Occupational Standards and learning tools are industry-driven initiatives. As a result of a need expressed by the Ornamental sector, CAHRC undertook a pilot project to revise an existing National Occupational Standard (NOC 2225) and an Essential Skills profile for Landscape Horticulturists. Learning tools, based on the revised Standard, were then developed to assist landscape employers in providing on-the-job training to new employees. This project served as the foundation for developing National Occupational Standards and learning tools in other sectors of agriculture. The following critical path illustrates the two-phase process undertaken to achieve this.

Note: The information outlined in each phase describes the generic steps in the process and provides explanation of the specific activities undertaken at each step, in the context of the pilot project. It should be noted that certain steps in the pilot project may need to be adapted to the specific needs of a sector and may not apply to every situation.

Phase 1: Develop a National Occupational Standard (NOS)

A National Occupational Standard (NOS) defines the scope of tasks associated with a specific occupation. It also defines the knowledge and skills workers must possess to demonstrate their competence in the occupation. As a result, a NOS can be a valuable industry reference or benchmarking tool that enables and facilitates worker mobility, thus providing more opportunities for workers and a broader choice of candidates for employers. National Occupational Standards are used by industry to support the following activities:


- Development or revision of training programs and learning tools.
- Development of certification or credentialing programs.
- Establishment of criteria by employers to enable recruitment, selection, training and retention of employees.

1. Establish an Industry Stakeholder Group.

- An industry stakeholder group or project 'Advisory Group' is established. The role of the Advisory Group members is to guide the progress of the project and convey the perspective of industry.
- *In the context of the pilot project undertaken for the Ornamental sector, the Advisory Group was established in September 2007 and included representation from the landscape industry, the education community, and federal and provincial governments. The Advisory Group played a unique and key role in liaising with industry stakeholders and in coordinating participation of subject matter experts and seasoned practitioners in all activities relating to the development of the NOS and the learning tools.*

2. Notify industry of intent to develop a National Occupational Standard.

- Before initiating the development of the NOS, it is important to ensure that all interested stakeholders are informed and to confirm that no other similar initiatives have been undertaken or are currently underway in Canada.

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- *In the context of the pilot project*, an existing NOS for the Landscape and Horticulture Technicians and Specialists (NOC 2225) (1995) and an Essential Skills (ES) Profile (2005-2006), were to be reviewed, revised and updated. With assistance from the Canadian Nursery and Landscape Association (CNLA) and a NOS development consultant, industry stakeholders across the country were informed of the project objectives and specifically of the intent to review, revise and if required, update the existing NOS and ES profile.

3. Conduct a National Occupational Analysis (NOA).

- A NOA is a formal process whereby detailed information on the scope, general activities, related tasks and subtasks, as well as skills and knowledge required to perform them, is gathered and analyzed through research on the occupation and stakeholder consultations.
- *In the context of the pilot project*, CAHRC conducted a facilitated NOA workshop on January 11-12, 2008. To ensure representation from a full range of activities and specialties being considered in the analysis, 15 industry professionals with extensive knowledge and experience in all sectors of the landscaping business (design, production, installation, maintenance and retail sales) and representing all regions of the country, were invited to attend the workshop. Although the initial objective of the project was to review the existing NOS and ES profile for NOC 2225, industry representatives instead agreed to proceed with the development of an occupational profile and NOA using the Canadian Vocational Association's DACUM (Developing A Curriculum) method, comprised of the following key components:
 - an occupational and task analysis via structured consultations with seasoned practitioners designated by industry;
 - competency statements that reflect a consensus achieved by the industry group;
 - method consisting of five levels of analysis: 1) defining the occupation and its scope, 2) identifying General Areas of Competency (GAC) or Blocks, 3) identifying tasks within each Block, 4) determining subtasks within each task, and 5) defining technical knowledge and abilities to perform subtasks;
 - collection of information and opinions on performance and occupational contexts specific to each task;
 - development of ES information based on the response of workshop participants.

As a result of the information gathered during the facilitated NOA process, a revised draft NOS and ES profile for the Landscape Horticulturist was developed.

4. Conduct stakeholder review and validation.

- Once a draft NOS has been developed, it must be reviewed and validated by a broad group of representative stakeholders. To ensure this exercise is meaningful, it is important to select the relevant stakeholders and an appropriate method to obtain feedback (e.g. focus groups, surveys, meetings and written feedback, etc.) and provide stakeholders with enough time to review and respond.

- *In the context of the pilot project, CAHRC held a facilitated meeting on February 10, 2008 to solicit this feedback from landscape industry, associations, employers and seasoned practitioners (23 participants from across the country) on the draft NOS and ES profile. With the assistance of the CNLA, paper-based and on-line surveys were then distributed widely to landscape employers, educators and training providers in both official languages, and 94 survey responses were recorded over a 60 day period. Stakeholders were requested to rate the importance and frequency of tasks and provide task-specific comments for subtasks to ensure they accurately represent the scope of what Landscape Horticulturists actually do. Respondents were also asked to determine where tasks and subtasks were best learned, i.e. in the classroom or on the job.*

5. Approve National Occupational Standard.

- Comments received from stakeholders during the review and validation process are compiled and a revised final draft of the NOS is delivered to the Advisory Group for review and approval.
- *In the context of the pilot project, the final draft NOS and ES profile, combined into one document, was delivered in May 2008 to CAHRC and the Advisory Group for review of content accuracy, completeness and relevance. In addition, a *Learning Source Report* (where tasks and subtasks are best learned, i.e. in the classroom or on the job) and a report comparing the revised NOS and ES profile with current Landscape and Horticultural certification requirements, e.g. CHT, CLP, CLD (excluding apprenticeship programs) were also submitted to CAHRC.*

6. Publish National Occupational Standard.

- The final approved version of the NOS is edited, translated and reviewed to ensure consistency and completeness in both official languages, so that it is a functional and user-friendly document. It is then published and made available to the public.
- *In the context of the pilot project, CAHRC, with assistance of the NOS development consultant, edited the final English version of the NOS and ES profile. The document was translated to French and reviewed to ensure consistency and completeness. Professional services were used to design and prepare the final layout for publication. Publication of the NOS and ES profile was announced in the CAHRC quarterly newsletter *Field Notes – Champs d'action* and in the CNLA *Newsbrief*. The NOS and ES profile was published in June 2008 on the CAHRC web site in both official languages as well as in hard copy.*

7. Communicate changes relevant to National Occupational Classification (NOC) codes(s) to HRSDC.

- HRSDC officials responsible for the NOC, are notified of the NOS and of updates required in the information relating to the NOC code(s) (e.g. occupational descriptions, occupational titles, lead statements and main duties, employment requirements and additional information, etc.).

- *In the context of the pilot project, CAHRC forwarded French and English copies of the revised NOS to HRSDC NOC officials at time of publication (June 2008). In the spring of 2009, the CNLA also submitted the revised NOS, requesting updates to information relating to NOC 2225 and NOC 8612.*

Phase 2: Develop Learning Tools

1. Cross-reference National Occupational Standard with curricula in current training programs

- Development of the NOS provides in-depth information of all tasks performed by an individual in that occupation. By cross-referencing this information with curricula or program courses offered in training programs, it is possible to assess the regional availability and to what extent specific tasks are covered by these programs.
- *In the context of the pilot project, a survey was conducted with providers identified as having training that addresses tasks defined in the revised NOS for Landscape Horticulturists. Information on relevant programs was also gathered from Internet research, and where information was insufficient, through contact with training providers.*

2. Determine need and type of learning tools.

- Once the tasks that are addressed through current programs have been determined, those not addressed through formal training can be identified and, through consultations with industry and training providers, the need for specific learning tools, i.e. delivered in the workplace or in the classroom, can be better defined.
- *In the context of the pilot project, a 'Learning Source' survey was conducted with respondents of the NOS review and validation survey to determine where tasks and subtasks were best learned, i.e. in the classroom or on the job. Respondents were also asked to indicate whether the horticultural industry would benefit from the development of a structured on-the-job training (OJT) program and corresponding tools for apprentices and/or new workers.*

3. Validate need and type of learning tools.

- Before proceeding with development of learning tools, it is important to validate their need with key stakeholders, namely the target audience (industry) and the training providers (education community). As with the review and validation process for the NOS, for this exercise to be meaningful it is important to select the right stakeholders, an appropriate method to obtain feedback and provide enough time for them to review and respond.
- *In the context of the pilot project, CAHRC conducted a facilitated workshop on November 27-28, 2009 involving 12 industry practitioners from all regions across the country to review each task and subtask outlined in the NOS and validate where each is best learned, i.e. in the classroom or on the job. Participants were also asked to establish performance criteria relating to safety, quality and productivity, for each task and subtask learned on the job.*

4. Develop learning tools.

- Comments and information received from key stakeholders are used to develop learning tools that address specific needs of the industry.
- *In the context of the pilot project*, the information gathered at the validation workshop was used to develop the first draft of the OJT tools. A draft *Landscape Horticulturist OJT Reference Guide* was delivered in January 2009 to CAHRC and the Advisory Group for review. The draft guide was circulated to participants of the validation workshop for review and comments relating to content and format, and was then translated into French in preparation for pilot testing in the field.

5. Conduct pilot tests of learning tools.

- Pilot testing of the workplace or classroom learning tools by industry stakeholders and training providers is a key step to ensuring that they reflect the industry's specific needs, are acceptable to the target audience and are delivered in an appropriate format. The pilot testing period should provide stakeholders with enough time to review and respond.
- *In the context of the pilot project*, 4 facilitated OJT mentor workshops were held between January and March, 2009 in different locations across the country. Participants were selected in each region based on their demonstrated aptitude for mentoring, communication and leadership within their company. The 36 industry employers who attended received hands-on instruction on how to train new employees in the field using the *Landscape Horticulturist OJT Reference Guide*. The participants agreed to test the training method and reference guide with new hires and apprentices and provide feedback during a 2-3 month period following the workshops.

6. Finalize learning tools.

- Feedback received from industry stakeholders and training providers during the pilot testing are compiled and incorporated into the final draft of the learning tools, and are delivered to CAHRC and the Advisory Group for review and approval, along with recommendations on final format.
- *In the context of the pilot project*, the final draft *Landscape Horticulturist OJT Reference Guide* was delivered in June 2009 to CAHRC and the Advisory Group for review of content accuracy and completeness. The Advisory Group also discussed recommendations relating to the final format of the document. CAHRC, with assistance of the OJT learning tool development consultant, edited the final English and French versions of the *Landscape Horticulturist OJT Reference Guide*.



7. Publish and distribute learning tools.

- The final approved version of the learning tools is reviewed to ensure consistency and completeness in both official languages. The learning tools are then published and made available to the target audience (workplace tools) and/or the training providers (classroom tools).
- *In the context of the pilot project*, professional services were used to design and prepare the final layout for publication, based on the recommended format. The guide was published in September 2009 in both official languages and made available to the landscape industry at minimal cost in both hardcopy and CD versions. Publication of the guide was announced on the CAHRC web site, in the CAHRC quarterly newsletter *Field Notes – Champs d'action*, and ads were placed in national and provincial landscape industry publications.