



# Master of Science

The Examining Board Life Sciences of Wageningen University declares that  
*De Examencommissie Life Sciences van Wageningen University verklaart dat*

**Trishia Jade Acilo**

born | geboren

2 May 1998, Philippines

has successfully completed the MSc programme  
*het afsluitend examen van de MSc-opleiding*

**Plant Sciences**

Specialisation | Specialisatie

Plant Breeding and Genetic Resources

accredited on | geaccrediteerd op

30 September 2019

according to the Higher Education and Research Act | conform de Wet op het hoger onderwijs en wetenschappelijk onderzoek

and has been awarded the degree of  
*met goed gevolg heeft afgelegd en daarmee is gerechtigd tot het voeren van de graad*

Master of Science (MSc)

Wageningen, the Netherlands | Wageningen, Nederland

26 October 2023

Examining Board | Examencommissie

Examinee | Geëxamineerde







Dienst Uitvoering Onderwijs  
Ministerie van Onderwijs, Cultuur en  
Wetenschap

Authenticity is confirmed  
and in accordance with the  
National Examinations  
Register as maintained by  
DUO, Diploma-recognition  
& Legalization, on behalf of  
the Minister of Education,  
Culture and Science,  
The Netherlands.

Fees

€ 6,-

Date

11-12-2023

Signature

  
E. Oosterveld



## APOSTILLE

(Convention de La Haye du 5 octobre 1961)

1. Country: THE NETHERLANDS  
This public document
2. has been signed by **E. Oosterveld**
3. acting in the capacity of Legalization Officer of the  
Educational Services Agency for Educational  
Credential Recognition and Legalization from the  
Education Executive Agency (DUO) in Groningen
4. bears the seal/stamp of the Ministry of Education,  
Culture Science

Certified

5. in Den Haag
6. on 12-12-2023
7. by the registrar of the district court of Den Haag
8. no. 2023/15473
9. Seal/stamp:
10. Signature:

V.O. Heiberg-  
Timmerman





# Diploma Supplement

## MSc

## Plant Sciences

The purpose of the Diploma Supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It is free from any value judgements, equivalence statements or suggestions about recognition. This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO.

### **1 INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION**

- |     |                                       |              |
|-----|---------------------------------------|--------------|
| 1.1 | Last name(s)                          | Acilo        |
| 1.2 | First name(s)                         | Trishia Jade |
| 1.3 | Date of Birth (day/month/year)        | 2 May 1998   |
| 1.4 | Student identification number or code | 1051321      |

## 2 INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and title  
conferred (in original language)  
Master of Science in

Plant Sciences

Students who have successfully completed a Master study programme at Wageningen University are entitled to work as an engineer (ir) or as a Master of Science. No further certification is required.

2.2 Main field(s) of study for the  
qualification

MSc programme in

Plant Sciences

Specialisation

Plant Breeding and Genetic Resources

2.3 Name and status of the awarding  
institution (in original language)

Wageningen University; public university, state recognised

2.4 Name and status of institution  
(if different from 2.3) administering  
studies (in original language)

See 2.3

2.5 Language(s) of instruction/  
examination

English.

### **3 INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION**

- |     |  |   |
|-----|--|---|
| 3.1 | Level of the qualification                             | Second cycle National Qualifications Framework for Higher Education; Level 7 NLQF and EQF for LLL.  |
| 3.2 | Official duration of programme in credits and/or years | The official duration of the programme is 120 ECTS, which equals two years of study. One ECTS equals 28 hours of study, according to the European Credit Transfer and Accumulation System.  |
| 3.3 | Access requirement(s)                                  | <p>For admission to a Master's study programme, the student must possess a relevant Bachelor's degree. The supplement to the Education and Examination Regulations of the Master's study programmes WU contains the list of Bachelor's degrees that provide admission to one or more contiguous Master's study programmes.</p> <p>For admission to a non-contiguous Master's study programme, the student must have proof of admission to the relevant Master's study programme. This proof of admission is granted by the Executive Board. The proof of admission to the non-contiguous Master's study programmes is provided if the admission requirements are satisfied.</p> |

## 4 INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of study Full time Master programme

4.2 Programme learning outcomes

### Learning Outcomes

After successful completion of this MSc programme graduates are expected to be able to:

- explain and exemplify theories, methods and techniques that are relevant to the selected specialization, and stay informed about recent developments in their field of specialization as well as related fields;
- apply knowledge of the physical, chemical and physiological aspects of crop growth and production, and of modelling and simulation to analyse yield constraints and develop appropriate crop management practices to sustain, and, where possible, improve food production (Specialization A - Crop Science);
- apply the knowledge of (environmental) plant physiology, crop ecology and post-harvest physiology in order to analyse plant growth in a protected environment, and develop technological approaches to optimize yield, control abiotic and biotic factors and improve post-harvest quality (Specialization B - Greenhouse Horticulture);
- apply the knowledge of soil quality, crop growth, nutrient dynamics, ecology and bio-interactions to analyse interactions between agriculture and the biotic and a-biotic environment, for conservation of (agro-) biodiversity and to improve the sustainability of agricultural land use (production of food and bioresources) (Specialization C - Natural Resources Management);
- apply the knowledge of classical, molecular, population and quantitative genetics, plant physiology, statistics, genomics and bioinformatics to design, develop and select varieties with improved yield, disease resistance, quality characteristics and suitability for sustainable plant production systems (Specialization D - Plant Breeding and Genetic Resources);
- apply the knowledge of plant-insect, plant-pathogen and crop-weed relationships, both at ecological and molecular level to analyse and design strategies for integrated pest management by integrating genetic plant resistance, cultural practices and biological control (Specialization E - Plant Pathology and Entomology);
- apply the knowledge of plant physiology and development, breeding and biotechnology for biomass production to design novel biobased concepts, products or processes in an international context;
- independently select and apply suitable laboratory techniques, analytical measurements, surveys, mathematical and statistical methods for the collection, processing and analysis of experimental data in plant science;
- independently resolve a scientific problem in plant sciences into research questions and develop a scientifically relevant research plan in which problem definition, hypothesis, experimental set-up and data analysis are described in relation to relevant literature;
- independently perform scientific experiments and analyse and interpret experimental data, in order to develop or design a novel solution, system, model or product;
- translate research data and scientific knowledge in the field of specialization into relevant solutions to complex problems;
- select relevant scientific literature to critically analyse current concepts, theories, techniques and debates as a basis for defining research questions and testing hypotheses in order to draw conclusions and develop recommendations;
- communicate in professional English with specialists and non-specialists about research and solutions to problems related to the field of specialization, both verbally (in presentations and debates) and in writing;
- experience the institutional, entrepreneurial and professional reality of a potential junior academic working environment and determine a personal professional perspective;
- co-operate in a multi-disciplinary intercultural team in different team roles, including the role of team leader to plan, perform and manage project-based work;
- analyse and evaluate the socio-economic, ethical and environmental aspects of research in the field of specialization and integrate these in academic work in an intercultural context;
- reflect on personal knowledge, skills, attitudes and performance, both individually and by giving and receiving feedback, and design and plan a personal learning path.

4.3 Programme details, individual credits gained and grades/marks obtained

The following list shows all the courses of the programme the student has attended. It states the course, its number of credits, and the final mark the student obtained for it.

Subject	Description	ECTS credits	Mark
<b>Common part</b>			
ZSS06000	General Safety	0	pass
YMC60809	Academic Consultancy Training	9	8.0
ELS66300	Management Skills	1.5	7.5
INF65100	Project Planning & Organising	1.5	7.5
<b>Specialisation: Plant Breeding and Genetic Resources</b>			
MAT20306	Advanced Statistics	6	6.0
PBR22303	Plant Breeding	3	6.0
PBR21803	Pre-breeding	3	6.0
ABG30306	Genomics	6	6.0
PPH31306	Seed Science and Technology	6	6.5
PBR30306	Breeding for Stress Tolerance and Quality	6	6.5
PBR70424	MSc Internship Plant Breeding	24	7.0
PBR30806	Design of Plant Breeding Programmes	6	6.0
PBR80436	MSc Thesis Plant Breeding	36	6.5
<b>Electives</b>			
GEN20806	Plant Biotechnology	6	6.5
GEN30306	Genetic Analysis Trends and Concepts	6	6.0
ZSS06300	Travel safety	0	pass
<b>Total</b>		<b>120</b>	

*Subject (course unit code)*

The subject refers to the course unit code in the study handbook.

*Duration of course unit*

The duration of the course unit is described in the study handbook. Wageningen University has 6 periods. These are divided in 4 periods of 8 weeks (12 credits) and 2 periods of 4 weeks (6 credits). Except thesis' and internships almost all courses have a duration of 1 period.

1 full academic year = 60 credits

1 period = 6 or 12 credits



4.4 Grading system and, if available, grade distribution table

The grading table requires universities to keep track of their grading practice and culture, which is good practice in many institutions across Europe.

The ECTS grading table allows for simple, transparent interpretation and conversion of grades from one system or context to another, and therefore does justice to the level of academic performance of all learners. Used correctly, it bridges different grading systems as well as different cultures in the European Higher Education Area and beyond.

The grading table gives the distribution of grades for this specific programme. It presents how many students (in percentages) receive a specific grade. This provides all necessary information to convert the grade in any local grading system. In case of too few results to calculate the distribution, the programme specific grading table is replaced by the BSc average grading table.

<i>National / Wageningen University Grade</i>	<i>Total number awarded in reference group</i>	<i>Grading percentages Plant Sciences*</i>
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\* Based on the total number of grades awarded in the degree programme concerned (or average Wageningen University MSc programmes) during three preceding years.

4.5 Overall classification of the qualification (in original language) Not applicable

5 INFORMATION ON THE FUNCTION OF THE QUALIFICATION

- 5.1 Access to further study A Master degree makes a student eligible for a PhD-programme.
- 5.2 Access to a regulated profession (if applicable)





## 6 ADDITIONAL INFORMATION

### 6.1 Additional information

The MSc programme Plant Sciences is accredited on 30 September 2019 by the NVAO.

### 6.2 Further information sources

[www.wur.eu/university](http://www.wur.eu/university)

Wageningen University  
Student Service Centre  
P.O. Box 414  
6700 AK Wageningen  
The Netherlands

[www.nuffic.nl](http://www.nuffic.nl)

## 7 CERTIFICATION OF THE SUPPLEMENT

### 7.1 Date

26 October 2023

### 7.2 Signature



Mrs Ir I.M. (Ingrid) Hijmann

### 7.3 Capacity

Head Student Service Centre

### 7.4 Official stamp

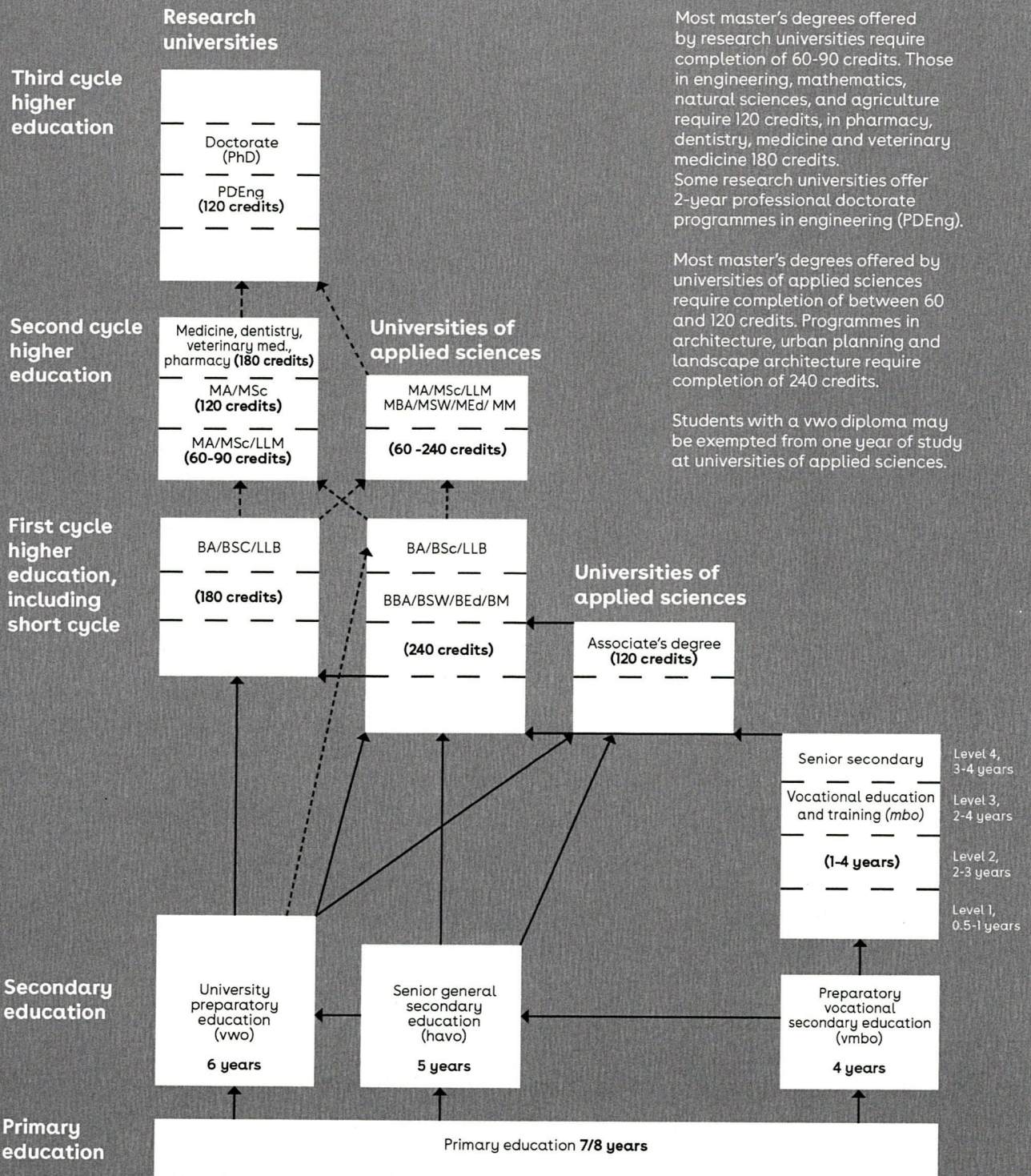


## 8 INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

See enclosed description of the education system in the Netherlands.

# The Dutch education system

The higher education system in the Netherlands is based on a three-cycle degree system, consisting of a bachelor, master and PhD. Two types of programmes are offered: research-oriented degree programmes offered by research universities, and professional higher education programmes offered by universities of applied sciences.



A solid arrow (→) indicates a right to access.

A dotted arrow (---→) indicates that some form of selection or bridging requirement may be applied.



## Higher education system in the Netherlands

Higher education in the Netherlands is organised around a three-cycle degree system, consisting of bachelor's, master's and PhD degrees. Two types of higher education programmes are offered: research-oriented degree programmes offered primarily by research universities, and professional higher education programmes offered primarily by universities of applied sciences.

### Primary and secondary education

#### Access to higher education

Children are allowed to begin school at the age of four, but are not legally required to do so until the age of five. Primary education lasts eight years (of which seven are compulsory). During their last year, pupils are advised on the type of secondary education they should pursue.

Secondary education, which begins at the age of twelve and is compulsory until the age of sixteen, is offered in various forms and at different levels. Vmbo programmes (four years) combine general and vocational education and prepare pupils to go on to senior secondary vocational education and training (mbo), lasting one to four years. There are two types of general education that grant admission to higher education: havo (five years) and vwo (six years). Pupils are enrolled according to their ability. The last two years of havo and the last three years of vwo are referred to as the 'second phase' (*tweede fase*), or upper secondary education. During these years, pupils focus on one of four subject clusters (*profielen*), each of which emphasises a certain field of study in addition to satisfying the general education requirements. Each cluster is designed to prepare pupils for study at the tertiary level. A pupil enrolled at a vwo or havo school can choose from the following subject clusters:

1. Science and Technology (*Natuur en Techniek*)
2. Science and Health (*Natuur en Gezondheid*)
3. Economics and Society (*Economie en Maatschappij*)
4. Culture and Society (*Cultuur en Maatschappij*)

Only the six-year vwo diploma grants access to bachelor's programmes at research universities; the vwo diploma, havo diploma and the highest level of mbo grant access to bachelor's programmes at universities of applied sciences.

#### Higher education

Higher education in the Netherlands is offered at two types of institutions: research universities and universities of applied sciences. Research universities include general universities, universities specialising in engineering and agriculture, and the Open University. Universities of applied sciences include general institutions as well as institutions specialising in a specific field such as agriculture, fine and performing arts or teacher training.

Whereas research universities are primarily responsible for offering research-oriented programmes, universities of applied sciences are primarily responsible for offering



programmes of higher professional education, which prepare students for specific professions. These tend to be more practice oriented than programmes offered by research universities.

In this binary, three-cycle system, bachelor's, master's and PhD degrees are awarded. Short cycle higher education leading to the associate's degree is offered by universities of applied sciences. Degree programmes and periods of study are quantified in terms of the ECTS credit system.

The focus of degree programmes determines both the number of credits required to complete the programme and the degree which is awarded. A research-oriented bachelor's programme requires the completion of 180 credits (three years) and graduates obtain the degree Bachelor of Arts, Bachelor of Science, or Bachelor of Laws. (BA/BSc/LLB), depending on the discipline. In most cases, a bachelor's degree awarded in the applied arts and sciences requires 240 credits (four years), to complete. The majority of students obtain a BA/BSc/or LLB degree, but those graduating from programmes in business administration, social work, education and music may obtain a BBA/BSW/BEEd or BM, respectively. Students who have a vwo diploma may be exempted from one year of study, allowing them to complete a bachelor's programme in the applied arts and sciences in three years (after completion of 180 credits). An associate's degree (Ad) in the applied arts and sciences requires 120 credits (two years), and students who complete the two-year programme can continue studying for a bachelor's degree in the applied arts and sciences.

A research-oriented master's programme requires the completion of 60, 90 or 120 credits (one, one-and-a-half or two years). In engineering, agriculture, and mathematics and the natural sciences, 120 credits are always required. Graduates obtain a Master of Arts, Master of Science, or Master of Laws (MA/MSc/LLM). A master's degree awarded in the applied arts and sciences requires the completion of 60 to 120 credits. The majority of students obtain an MA/MSc/or LLM degree, but those graduating from programmes in business administration, social work, education and music may obtain an MBA/MSW/MEEd or MM, respectively.

The third cycle of higher education, leading to a PhD or to a Professional Doctorate in Engineering (PDEng), is offered only by research universities. The major requirement for the PhD, which is offered by all research universities, is completion of a dissertation based on original research that is publicly defended. In addition to PhD programmes, the three engineering universities offer technological designer programmes consisting of advanced study and a personal design assignment in a number of engineering fields. The technical designer programme requires two years of study to complete and graduates obtain the degree Professional Doctorate in Engineering (PDEng). The training of medical specialists is the responsibility of the professional group in an organisational setting at a university hospital.

## **Requirements for access to higher education**

For access to research-oriented bachelor's programmes, students are required to have a vwo diploma or to have completed the first year (60 credits) of a bachelor's programme at a university of applied sciences. For the latter category of students, additional selection criteria may apply. The minimum access requirement to universities of applied sciences is either a

vwo diploma, a havo diploma or a diploma of secondary vocational education (mbo), provided certain conditions are met. The vwo diploma not only grants access to universities of applied sciences, but based on this diploma, students may receive exemption from one year of study as well. For access to both types of higher education, pupils with a vwo or havo diploma are required to have completed at least one of the subject clusters that fulfil the requirements for the higher education programme in question. A quotum, or *numerus fixus*, applies for access to certain programmes, primarily in the medical sciences. For *numerus fixus* programmes, institutions are permitted to select the students they admit based on academic performance, personal motivation, etc. Potential students older than 21 years who do not possess one of the qualifications mentioned above can qualify for access to higher education on the basis of an entrance examination and assessment (recognition of prior learning). For access to certain programmes, particularly those in the fine arts, students have to demonstrate the required artistic abilities. The only access requirement for the Open University is that applicants be at least eighteen years of age.

For access to all master's programmes, a bachelor's degree in one or more specific disciplines is required, in some cases in combination with other requirements. Graduates with a bachelor's degree in the applied arts and sciences usually have to fulfil additional requirements for admission to a research-oriented master's programme.

## Credit system and grading

A student's workload is measured in ECTS credits. According to Dutch law, one credit represents 28 hours of work and 60 credits represents one year of full-time study. The grading system used in the Netherlands is on a scale from 1 (very poor) to 10 (outstanding). The lowest passing grade is 6; 9s are seldom given and 10s are extremely rare. Grades 1-3 are hardly ever used. The academic year is 42 weeks long.

## Quality assurance and accreditation

A guaranteed standard of higher education, and alignment with the Qualifications Framework for the European Higher Education Area, is maintained through a system of legal regulation and quality assurance, in the form of accreditation. The Ministry of Education, Culture and Science is responsible for legislation pertaining to education. The agriculture and public health ministries play an important role in monitoring the content of study programmes in their respective fields.

Quality assurance is carried out through a system of accreditation, administered by the [Accreditation Organisation of the Netherlands and Flanders \(NVAO\)](#). According to the Dutch Higher Education Act, all degree programmes offered by research universities and universities of applied sciences must be evaluated according to established criteria. Programmes that meet the criteria are accredited: i.e. recognised for a period of six years. Only accredited programmes are eligible for government funding; students receive financial aid and graduate with a recognised degree only when enrolled in, and after having completed, an accredited degree programme. All accredited programmes are listed in the Central Register of Higher Education Study Programmes (CROHO).



As part of the accreditation system,, higher education institutions can request the NVAO to conduct an 'institutional quality assessment' to determine the extent to which the institution is capable of guaranteeing the quality of the programmes it offers. Programmes offered by institutions that receive a positive evaluation still have to be accredited, but the accreditation procedure takes less time and is not as extensive.

Besides the accreditation of degree programmes, the Netherlands has a system by which the Ministry of Education, Culture and Science recognises higher education institutions by conferring on them the status of either 'funded' or 'approved'. "Funded" indicates the institution is fully financed by the government. "Approved" indicates that the institution does not receive funds from the government and has to rely on its own sources of funding. Whether a degree programme is offered by a 'funded' or an 'approved' institution, it must be accredited and registered in CROHO to be considered recognised.

Please note: if a bachelor's or master's degree programme is not registered in CROHO, the quality is not assured by the Dutch quality assurance system. The quality may however be assured by another system.

## **National Qualifications Frameworks**

An important tool to facilitate the recognition of foreign qualifications is using overarching qualifications frameworks as a translation tool through which qualifications awarded in one country can be compared to qualifications awarded abroad. A comprehensive overarching framework used in the European Economic Area is the European Qualifications Framework for Lifelong Learning (EQF-LLL). The EQF-LLL describes the learning outcomes associated with qualifications at eight different levels and is used as a common reference framework to assist in comparing national qualifications systems and their levels. The qualifications framework in the Netherlands is referred to as the Dutch Qualifications Framework (NLQF). The NLQF was officially referenced to the EQF in 2012. The NLQF has a total of nine levels: an "entry level" which is below level 1 of the EQF-LLL and therefore not referenced to the EQF-LLL, and 8 levels which are referenced to the 8 levels of the EQF. Further information on the Dutch Qualifications Framework can be found on the website of the [National Coordination Point NLQF](#), which is the organization responsible for the development and implementation of the NLQF.