



ALBERTA INSTITUTE  
OF AGROLOGISTS

2021

# *Agricultural and Natural Resource Economics Practice Standard*



Approved by AIA Council

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## Preface

This practice standard is part of the continuing effort by the Alberta Institute of Agrologists (AIA) to meet its mandate as outlined in the *Agrology Profession Act*. The *Act* specifies that the Institute must establish, maintain and enforce standards of practice as part of the profession's obligation to protect the public in matters related to agrology.

This document was created by a Practice Area Expert Committee (PAEC) consisting of five regulated members of the AIA. Members were selected for their expertise and long-standing practice in rural development and support.

This practice standard is the basis upon which practice reviews will be conducted by the AIA. This document will assist members in ensuring that their professional practice meets the standards for knowledge, work experience, skills and performance required for professionals practicing in the Rural Development and Support practice area.

This document will be reviewed on a periodic basis to ensure it is up to date with current standards and state of knowledge for the practice area.

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Storm Over Canola Landscape: Heather Sinton, PAg

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## Acronyms

CKA	Core Knowledge Area
KR	Knowledge Requirement
PA	Practice Area
PAEC	Practice Area Expert Committee

# 1. INTRODUCTION

This practice standard applies to regulated members of the Alberta Institute of Agrologists (AIA) who practice or intend to practice in the "*Agricultural and Natural Resource Economics*" practice area (PA). It defines expectations and outlines requirements regarding professional practice within this area. Documentation of these requirements provides necessary assurance to the public that AIA has specific requirements for professional practice. This practice standard provides members a benchmark upon which to assess their practice and identify potential learning needs in their continuing competence program.

This practice standard is based on the premise that agricultural and natural resource economics are multidisciplinary activities. Practitioners are expected to understand the limit of their knowledge, skills and experience and seek expertise of other professionals where necessary.

This practice standard forms the basis for implementation of a practice review protocol for this PA. Members working within this PA will be able to request a review of their professional practice based on this practice standard. Such a review will provide valuable feedback to members for areas of improvement.

## 1.1. Objectives

The objectives of this practice standard include the following:

- To identify and define the knowledge, skills, experience and performance requirements for professional practice within the PA;
- To provide documentation of the requirements indicated above so regulated members of AIA may assess their practice against this standard and thereby identify learning needs to ensure they are in compliance with the standard;
- To provide a standard against which a member's professional practice may be reviewed by AIA to assist the member in identifying areas of their practice that may need improvement; and
- To provide a mechanism whereby AIA can demonstrate that members within the profession are managed in a manner which protects the interests of the public in matters related to agricultural and natural resource economics.

## 1.2. Definitions

**Competence:** The ability to perform certain tasks in one's professional practice based on educational training, skills and work experience in a manner that meets performance objectives as defined in a practice standard.

**Core Knowledge Area:** A general area of knowledge consisting of one or more specialized subject matter areas that is required for practicing within a PA.

**Direct Supervision:** Guidance provided by a competent professional who accepts responsibility for work conducted by a less experienced professional.

**Experience:** Knowledge, practical wisdom or skills gained from observation and doing.

**Performance:** The exercise of knowledge in a professional practice that demonstrates the required ethical conduct and wise judgment as specified within a practice standard.

**Practice Area:** A unique functional area of professional practice within the agrology profession that requires specialized knowledge, based on education, work experience and skill sets.

**Practice Area Expert Committee:** A committee of experts who have demonstrated through their professional practice that they have a comprehensive understanding of the requirements for professional practice in a PA.

**Practice Review:** A process whereby a peer review panel examines a regulated member's professional practice against a practice standard, with the intent of providing input on practice improvement.

**Practice Standard:** A document that outlines the requirements and expectations for professional practice within a PA.

**Professional Practice:** The competent and ethical provision of specialized knowledge, recommendations and assessments based on educational training, work experience and skill sets while being accountable to peers as a regulated member of a professional regulatory organization.

**Regulated Member:** A member in good standing with the Alberta Institute of Agrologists who holds one of the following designations: PAg, RTAg, AIT or ATT.

**Skill:** An ability developed over multiple years of work experience.

**Subject Matter Area:** A specialized area of knowledge such as soil chemistry, plant physiology or hydrology required for professional practice within a PA.

## 2. SCOPE OF THE PRACTICE AREA

The Agricultural and Natural Resource Economics (ANRE) practice area is a multidisciplinary and integrated approach to the study of economics and its interconnection with the environment and agriculture. Natural resource economics is focused on managing resources such as land, water, air, and soils and emphasizes the importance of sustainability. Agricultural economics considers land usage, food distribution networks, agricultural markets, finance, and enterprise management, and maximizing profits. Economic evaluation of agricultural production systems and natural resources involves examining cash flow, inputs/outputs, profitability, efficiency, public policies, externalities, public goods, and long-term viability.

The primary objective of an ANRE Agrologist is to support efficient use of agricultural and natural resources, including maximize profitability in agriculture while ensuring natural resources are maintained to the benefit of society. Practitioners aim to facilitate the management of businesses through roles such as consulting, advising, financing, marketing, and supply. While some Agrologists in this PA work with governments to establish and set policies, others identify or create financial products to address the capital and resource needs of their clients. Practitioners focus on the value of agriculture and agricultural goods such as crops, livestock, or machinery and consider possible value losses (i.e. damages and loss of use). ANRE Agrologists investigate how the environment, natural resources and agricultural lands are managed to ensure long-term productivity of both the agricultural land base and the ecosystem services that land, air and water resources provide to society. They identify profitable lending opportunities, develop and evaluate business plans, review finances, and assess the production capabilities of businesses. Practitioners aim to connect competing elements such as supply chains and trade with their clients' production outcomes.

The Agricultural and Natural Resource Economics PA of Agrology specializes in economics, business and finance. However, economics is fundamental to all aspects of Agrology, and is, therefore, an integral part of every practice area. ANRE Agrologists consult with, or provide advice to, Agrologists in the Agricultural Marketing and Sales PA, Crop Production PA, Livestock Production PA, Rural Development and Support PA, and Environmental Impact Assessment PA, among many others. Outside of Agrology, ANRE Agrologists work closely with,



and many times are, licensed Professional Appraisers (P.App.). Agrologists consult and work jointly with Chartered Professional Accountants (CPA's), Chartered Business Valuator's (CBV's), and Professional Lawyers to produce the required information and documentation for their clients.

## 2.1 Core Activities Within the PA

Regulated members practicing within the ANRE PA aim to solve problems for their clients. Through consultation they advise their customers of the best options to move their business or project forward. ANRE Agrologists frequently work on compensation, whether this be through property rights, surface rights, first nation rights, or modelling for losses incurred. Within these overarching pursuits, there are nine core activities that Agrologists in this PA may be active in. These activities include: business planning, economic analysis, appraisal and valuation, feasibility studies, financial analysis and planning, market assessment planning/guidance, natural resource values, risk management, and policy development.

### 2.1.1 Business Planning

ANRE Agrologists strive to help businesses plan for their future. Working with specific businesses and with existing operation(s) or management teams, practitioners lay out plans from a marketing, financial and operational viewpoint. Business planning is important to allow a company to lay out its goals and attract investment. Components of a business plan may include: feasibility studies, assessing viability of the business, profitability, cash flow, cost of production, supply chains, competition and markets, and succession planning.

### 2.1.2 Economic Analysis

Agrologists in this PA may carry out an economic analysis for their client. Practitioners consider the opportunity costs of resources employed and attempt to measure, in monetary terms, the private and social costs and benefits of a project to the community or economy. Agrologists examine the impacts of trade and government policies and look to the broader economy for insight to assist their clients.

### 2.1.3 Appraisal and Valuation

Many Agrologists in this PA provide their clients with valuation of real property. Some ANRE Agrologists provide support to licensed appraisers through consultation. Other Agrologists are simultaneously appraisers, accredited by one of many certifying agencies in Canada or the United States. Agrologists providing appraisals will give opinions of market value based on comprehensive research and analysis. Appraisals are critical to the decision-making process of property owners, business investors, governments and other professionals during transactions. Agrologists may also review and consult on machinery, equipment and agriculture buildings and improvements. Practitioners in this PA may value productive assets such as land, equipment and livestock. ANRE Agrologists value assets by determining the fair market or present value of assets, using book values, absolute valuation models, option pricing models or comparables. Agrologists may be consulted to support Chartered Business Valuator's (CBV's) in valuing a business as an entity.

### 2.1.4 Feasibility Studies

ANRE Agrologists are often involved with feasibility studies to assess the practicality of a conceptual proposed plan or project. Practitioners hope to ascertain whether the project is feasible, if the client has the people and resources necessary for the project to succeed, and if the client will achieve the return on investment (ROI) that they need or expect. The ANRE Agrologist must thoroughly understand all aspects of the project, concept, or plan. They must

become aware of any potential problems that could occur while implementing the project and be able to determine if the project is worth undertaking.

Feasibility studies are important to the activity of business development (Section 2.1.1) and can identify potential obstacles that may impede its operations. With the study, Agrologists can create marketing strategies to help convince investors that investing in a project or business is a wise choice. They can also provide important information that could prevent the company from entering blindly into risky ventures.

### 2.1.5 Financial Analysis and Planning

Practitioners in this PA may need to complete financial analysis or planning as it relates to agricultural operations and/or natural resource values. Agrologists examine a client's financial statements, including the income statement, balance sheet, and cash flow statement, to determine their performance and suitability. Practitioners will analyze the financial information, calculate ratios from the data, and compare them against those of other companies or against the company's own historical performance. A common example of this is return on assets (ROA), used to determine how efficient a company is at using its assets which is a measure of profitability. The ANRE Agrologist aims to determine why their client is profitable or not and will suggest a plan that makes the most sense for the client or producer moving forward. Practitioners may also help the client in determining and meeting other business goals that may not be profit driven.

### 2.1.6 Market Assessment Planning/Guidance

As a subset of feasibility planning, practitioners in this PA will complete market assessments to identify potential opportunities for clients, and to gauge whether there is a market for what they intend to produce. ANRE Agrologists will complete thorough research to determine if the market is large enough to build a sustainable business, as well as if it can achieve success in terms of sales and customer satisfaction. Agrologists must determine the demographics and segmentation of the market, along with their potential customers and buying patterns. They must assess the market value of the product and decide what the target market is for their client. Agrologists will also gather information for market need, competition, and economic environment in terms of barriers to entry and regulations. The practitioner must inform the client of everything they need to know regarding the market they intend to enter and propose a plan to move forward successfully in that market. Market assessments may include examination of markets for ecosystem services such as markets for wetland restoration, carbon sequestration, and water quality protection.

### 2.1.7 Natural Resource Values

Some ANRE Agrologists work within a specific realm of valuing natural resources. Natural resources do not always easily translate into dollar values and the traditional economic concepts used to value other assets. The need to consider the value of natural resources in the overall economy is becoming increasingly important to a society that values these resources and their long-term health and sustainability. Natural resources provide ecosystem services that are essential to both human and ecological well-being and are closely tied to the long-term productivity of the land base upon which agriculture is dependent. A primary example is the value of wetlands to water quality, quantity, aquifer recharge and maintenance, flood protection, carbon sequestration, and wildlife habitat and biodiversity. All of these are considered to be of value by agriculture and society. ANRE Agrologists work to determine how to include these values within an economic system that traditionally has not considered natural resource values in the past.

### 2.1.8 Risk Management

Practitioners in this PA must be able to identify, analyze and mitigate uncertainty in investment decisions for their clients. Agrologists will attempt to quantify the potential for losses in an investment, and take the appropriate action given the clients investment objectives and risk tolerance. Obtaining a good understanding of risk can help clients better understand the opportunities, trade-offs, and costs involved with different investment approaches. Beyond financial risk, the ANRE should have the skills and abilities to advise on the external risks to the business including environmental, governmental/governance, social, and technological risks. External risks could include interest rate, cash flow, commodity prices, exchange rates, production variability and government policy.

### 2.1.9 Policy Development

Agrologists in this PA may provide advice and assist in developing policy in the realm of agriculture or natural resources. The economic advice and research from an ANRE Agrologist can be invaluable in creating policy around things such as crop insurance, wetlands, agricultural production, etc. Government policy (federal, provincial, municipal) related to agriculture and natural resource management utilizes the expertise of ANRE Agrologists to ensure that economic considerations are factored into overall policy. Policy analysis includes the assessment of the social benefits and costs of proposed programs or policies. The development of cost benefit analyses or policy analysis relies on the use of an economic conceptual framework and includes measures of market and non-market benefits and costs, discounting benefits and costs over time and assessment of the distribution of impact across society. Policy analysis also includes the assessment of policy options to address market failures (externalities and public goods). The ANRE Agrologist evaluates policy options ranging from market-based instruments (e.g. payments for ecosystem services) to direct regulatory measures.

## 3. KNOWLEDGE REQUIREMENTS

Knowledge requirements are technical and scientific areas of knowledge that are essential to professional practice within the PA (Table 1). These requirements consist of core knowledge areas consisting of one or more specialized subject matter areas that are foundational to the PA.

The specification of subject matter within each required core knowledge area provides assurance that members working within the PA have the necessary fundamental knowledge to practice. The subject matter within each core knowledge area represent specific scientific or technical knowledge relevant to the PA activities. The subject matters within each core knowledge area represent areas of study equivalent to a three-credit course in a post-secondary educational institution. Subject matter knowledge is normally obtained through education in a degree or diploma program; however, knowledge in certain subject matter areas may be obtained via industry courses, work experience self-study and mentorship. To assure the public that practitioners have acquired knowledge via work experience, self-study or mentorship, such knowledge needs to be validated through a challenge exam process implemented by the AIA.

It is the responsibility of members to review Table 1, conduct self-assessments and identify how their knowledge and expertise aligns with the required subject matters. Members who do not meet a required subject matter within a core knowledge area related to their professional practice are required to address the deficiency before practicing unsupervised in relation to that core knowledge area. Members are expected to work toward updating their knowledge where they are lacking specific subject matters for the activities related to their practice. ***Where regulated members do not meet a knowledge requirement for a subject matter, they are required to***

**address the deficiency in one of the following ways.**

1. Seek Advice and Direction: Members lacking specific knowledge in required subject matters must recognize the limits of their expertise in that subject matter and seek advice and direction from a qualified professional.
2. Complete Challenge Exam(s): To validate that subject matter knowledge has been gained through work experience, self-study or non-adjudicated industry courses, a member may choose to either (i) write a professional practice examination supplied by the AIA; or, (ii) to appear before a panel of peers to complete an oral examination supplied by the AIA.
3. Pursue Formal Education and Training: Obtain credit in a formal course from an appropriate educational institution or from an industry course approved by the AIA. Such courses must have an adjudicated examination to document knowledge attained.

### 3.1 Core Knowledge Areas

Several core knowledge areas have been identified as being foundational to practice within the PA (Table 1). These include core knowledge in Business Finance and Accounting, Economics, Agricultural Economics, Natural Resource Economics, General Agriculture, Ecology, Markets, and Data Analysis and Econometrics.

Core knowledge areas consist of both required subject matters and recommended subject matters. Required subject matters represent the minimum credible knowledge required for the given core knowledge area and are mandatory for members who wish to provide professional advice or services related to the core knowledge area.

Recommended subject matters represent knowledge that is not mandatory but provide increased depth of knowledge related to the core knowledge area. These subject matters are highly recommended and have been identified to provide direction to members for their continuing competence program.

#### 3.1.1 Business Finance and Accounting

Business finance and accounting knowledge is required to competently analyze costs, returns and financial ratios, understand and interpret financial statements and clearly convey financial information. Competency in this area is necessary to make the connection between the physical elements (e.g. enterprises, agricultural production or environmental factors) and financial elements. This knowledge area enables the Agrologist to make and support recommendations on business financial structure, enterprise selection and viability of different scenarios. With more in-depth knowledge, the Agrologist can make recommendations on risk management, investment strategies and business operations.

#### 3.1.2 Economics

An understanding of both micro and macroeconomics is the foundation to understanding the use of resources in the production, distribution and consumption of agricultural goods or services. The fundamentals of supply and demand and fiscal or economic policy will impact the choices and decisions made by Agrologists in utilizing resources employed in agricultural production in a sustainable and acceptable way. Economics drive the value of the resources used and the commodity produced. Practitioners use economic analysis to compare profitability and risk of different production or management choices under varying scenarios. This analysis will also help to maximize profitability in the choice of production as well as the quality and quantity of the commodity produced. Economics also provides a framework for cost benefit analysis of policies, programs, or management options.

### 3.1.3 Agricultural Economics

Knowledge of agricultural economics is necessary to apply economic tools to production, processing, marketing, financing, and consumption in agriculture. The ANRE Agrologist uses analytical techniques to permit understanding of policy and market issues. Practitioners must also understand land use economics to balance the efficient and equitable use of land and other resources.

### 3.1.4 Natural Resource Economics

Natural resource and environmental economics has become an increasingly important field for economic application and analysis, particularly related to the analysis of social benefits of non-market goods and services and policies to address externalities. One objective is to determine the “value” of natural resources that can then be incorporated within economic models. This requires an understanding of how natural resources are organized and function so that contribution of these resources can be effectively accounted for. As society increasingly places importance on sustainability, the value of ecosystem services provided by natural resources must be built into economic analyses. Furthermore, the Agrologist should understand alternative policies to address negative externalities (e.g. water pollution) and public goods (e.g. wetland services and recreation).

### 3.1.5 General Agriculture

An overall general knowledge of Agriculture production and business is necessary for the understanding of Agriculture and Natural Resource Economics. This includes, but is not limited to, an understanding of differing enterprises such as livestock and crops and the business decisions, expenses, revenues, and operations involved. In addition, it's important for ANRE practitioners to understand how these enterprises interact with the surrounding environment and natural resources (e.g. soil, water, plants, animals and climate change). It is important for the Agrologist to have this general knowledge to properly analyze the situation and provide advice.

### 3.1.6 Ecology

Ecology is the study of the organization and integration of living and non-living components of individual and interacting ecosystems. A knowledge of ecological principles is essential for the Agrologist to understand how various natural resources (ecosystem components) are organized into a unified system that supports life processes. This understanding requires system-level thinking that does not value one component over another, but rather, sees each component's value in the context of the greater system. This system thinking enables practitioners to complete natural resource valuation.

### 3.1.7 Markets

An understanding of markets is essential to the sale of agricultural products. Prior to developing a new commodity, a new chemical, a new food processing technique or use of an agriculture product for non-food purposes, a market assessment is required to determine its financial feasibility. In order to conduct this type of analysis, ANRE practitioners must have a strong knowledge of agriculture products, food products, markets, customer demand (e.g. demographics, buying patterns, competing products), domestic and international marketability and manufacturing costs. Without market knowledge, obtaining funding or approval for the development or enhancement of agriculture products would be impossible.

### 3.1.8 Data Analysis and Econometrics

An understanding of different types and sources of data, and how they inform economic analysis is important for the ANRE Agrologist. Practitioners must be able to evaluate and

analyze data using sound statistical and econometric principles. Practitioners should also be able to critically evaluate data presentation and analysis presented to them. Although quantitative analysis is most common, practitioners should know when qualitative analysis can provide additional useful insight.

*Table 1. Core knowledge areas, required subject matter areas and recommended subject matter areas for the Agricultural and Natural Resource practice area.*

<b>Core Knowledge Area</b>	<b>Required Subject Matters</b>	<b>Recommended Subject Matters</b>
<b><i>Business Finance and Accounting</i></b>	<ul style="list-style-type: none"> <li>• Business Planning</li> <li>• Financial Management</li> <li>• General Accounting</li> </ul>	<ul style="list-style-type: none"> <li>• Business Operations</li> <li>• Organizational Behaviour</li> <li>• Consumer Behaviour</li> <li>• Investment Management</li> <li>• Risk Management</li> <li>• Introductory Tax Accounting</li> </ul>
<b><i>Economics</i></b>	<ul style="list-style-type: none"> <li>• Introductory Macroeconomics</li> <li>• Introductory Microeconomics</li> </ul>	<ul style="list-style-type: none"> <li>• Valuation and Appraisal</li> <li>• Advanced Supply/Demand Economics</li> <li>• Breakeven Analysis</li> <li>• Foreign Exchange Rates</li> <li>• Cost-Benefit Analysis</li> </ul>
<b><i>Agricultural Economics*</i></b>	<ul style="list-style-type: none"> <li>• Introductory Agricultural Economics</li> <li>• Land Use Economics</li> </ul>	<ul style="list-style-type: none"> <li>• Legislation and Policy</li> <li>• Commodity Markets</li> <li>• Cost of Production</li> <li>• International Development</li> </ul>
<b><i>Natural Resource Economics*</i></b>	<ul style="list-style-type: none"> <li>• Introductory Natural Resource Economics</li> <li>• Environmental Economics</li> </ul>	<ul style="list-style-type: none"> <li>• Legislation and Policy</li> <li>• Introductory Ecology</li> <li>• Introductory Biology</li> </ul>
<b><i>General Agriculture</i></b>	<ul style="list-style-type: none"> <li>• <b>AT LEAST TWO OF</b> the Subject Matter Areas in the Recommended Subject Matter Column</li> </ul>	<ul style="list-style-type: none"> <li>• Introductory Crop Production</li> <li>• Introductory Livestock Production</li> <li>• Introductory Food Science</li> <li>• Land Use</li> <li>• Introductory Soil Science</li> </ul>
<b><i>Ecology</i></b>	<ul style="list-style-type: none"> <li>• Introductory Ecology</li> </ul>	<ul style="list-style-type: none"> <li>• Community Ecology</li> <li>• Population Ecology</li> <li>• Landscape Ecology</li> </ul>
<b><i>Markets</i></b>	<ul style="list-style-type: none"> <li>• Market Economics</li> <li>• Commodity Marketing</li> </ul>	<ul style="list-style-type: none"> <li>• Future Markets</li> <li>• Risk Management</li> <li>• Consumer Behaviour</li> </ul>

		<ul style="list-style-type: none"> <li>• International Markets and Trade</li> </ul>
<b>Data Analysis and Econometrics</b>	<ul style="list-style-type: none"> <li>• Introductory Statistics</li> <li>• Methods in Applied Economics</li> <li>• Economic Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Advanced Methods in Applied Economics</li> <li>• Advanced Economic Analysis</li> <li>• Survey Design</li> <li>• Optimization and Simulation Modelling</li> </ul>

\*You must meet the required subject matters for areas in which you practice. For example, if you practice in Agricultural Economics, but do not practice in Natural Resource Economics, you are only required to meet the requirements for Agricultural Economics, and vice versa.

## 4. WORK EXPERIENCE

Work experience represents a source of knowledge that is gained through professional practice rather than through education. Such experience facilitates development of skill sets and attaining of knowledge needed to be competent within one’s practice. Development of these skill sets and acquisition of knowledge takes time working in an environment where feedback is available to hone one’s skills and acquire experiential knowledge.

Three levels of work experience are recognized within the Practice Standard. These include:

- a) Junior Level (0 to < 5 years) – The junior level of experience coincides with entry level personnel who have recently graduated from an appropriate educational program or have recently begun offering professional services in the PA. This work experience is conducted under supervision by qualified practitioners within the PA. Practitioners at the junior level are considered to have limited experience to provide wholly unsupervised professional services.
- b) Intermediate level (5 to < 12 years) – The intermediate practitioner no longer requires complete direct supervision and has developed skills and obtained the necessary experiential knowledge to take responsibility for their work. Intermediate practitioners may act as mentors for junior personnel and may also seek mentoring from senior level personnel.
- c) Senior level (≥ 12 years) – Senior level practitioners generally provide supervision to intermediate and junior personnel. They are often recognized as knowledge experts by their peers and are often sought after for advice and counsel.

Members will ensure they have sufficient work experience to conduct the work and accept responsibility for the work they do. The time frames indicated in Table 2 are provided for guidance. Career progression and work experience may vary by individual.

*Table 2. Typical years of work experience and examples of job duties and responsibilities.*

<b>Level of Experience</b>	<b>Examples of Typical Job Duties</b>	<b>Key Responsibilities</b>
Junior (typically < 5 years)	<ul style="list-style-type: none"> <li>• Data collection and compilation</li> <li>• Market research</li> <li>• Preliminary data analysis and interpretation</li> <li>• Build draft reports</li> </ul>	<ul style="list-style-type: none"> <li>• Self-development and demonstration of initiative</li> <li>• Being flexible to different work environments</li> </ul>

	<ul style="list-style-type: none"> <li>• Supervised recommendations</li> <li>• Submit loan applications</li> <li>• Job shadowing of intermediate and/or senior personnel</li> <li>• Learning nature of the business</li> <li>• Building contacts</li> <li>• Attending industry meetings</li> </ul>	<ul style="list-style-type: none"> <li>• Being part of team environment</li> <li>• Building report writing and presentation skills</li> <li>• Recognizing the limits of one's knowledge and seek to advance one's knowledge</li> <li>• Taking responsibility for one's job duties and overall work performance</li> <li>• Professional development</li> <li>• Developing client relationships/interpersonal skills</li> </ul>
Intermediate (typically 5 to <12 years)	<ul style="list-style-type: none"> <li>• Data analysis and interpretation</li> <li>• Making recommendations and reporting</li> <li>• Identify business improvements and market opportunities</li> <li>• Supervise and mentor junior personnel</li> <li>• Develop business plans, recommendation plans</li> <li>• Progressive development of business clients</li> <li>• Prepare and deliver presentations</li> </ul>	<ul style="list-style-type: none"> <li>• Provide guidance and training to junior personnel</li> <li>• Analyze and recognize industry trends</li> <li>• Manage clients</li> <li>• Identify risk and manage accordingly</li> <li>• Work in accordance with senior direction</li> <li>• Professional development</li> </ul>
Senior (typically ≥12 years)	<ul style="list-style-type: none"> <li>• Conduct technical presentations</li> <li>• Exercise leadership role in industry</li> <li>• Strategic planning</li> <li>• Project Management</li> <li>• Provide a trusted and reputable source of technical and operational expertise</li> <li>• Supervising and reviewing work products and policies</li> <li>• Reporting</li> </ul>	<ul style="list-style-type: none"> <li>• Provide guidance and training to intermediate personnel</li> <li>• Administrative and technical supervision of personnel</li> <li>• Coordinate with senior management regarding business strategies, etc.</li> <li>• Professional role model</li> <li>• Professional development</li> </ul>

#### 4.1 Skill Set Requirements

Certain skill sets and capabilities enhance competency within a given PA. Application of technical knowledge requires skill sets which have been identified under this practice standard (Table 3).



Skill sets are tied to effective functioning within the PA and are usually developed during work experience.

Members practicing in this PA are required to evaluate their skills and capabilities against the information in Table 3, and if deficiencies are identified, should target their individual continuing competence programs to address those deficiencies.

*Table 3. Skill sets relevant to the practice area*

<b>Skill Sets</b>	<b>Description</b>
Understanding and applying legislation, regulations, policies and standards	It is important for practitioners to stay current with legislation, policies and standards relevant to the PA. Practitioners must ensure clients are informed of standards and regulations that (may/do) impact their operations presently and in the future. In addition, practitioners take an active role to help guide and formulate policy change(s). Policy analysis skills include cost-benefit analysis and determination of effective policy options.
Communications and problem solving	Communication and problem solving are vital skills for the practitioner working in this PA. Communication needs to be at a level understood by those with concerns (layman’s terms) to ensure recommendations can be understood and followed. Problem solving is necessary to ensure all avenues of possible causes have been evaluated to ensure conclusions are valid. This skill set involves critical information evaluation/interpretation and analysis; integration of knowledge gained with client’s specific situation in formulating response(s); understanding that options, as opposed to one answer only, may be required (not always black/white but trade-offs need be considered). Effective communication is important for capturing the value of a member’s service offering.
Mediation and conflict resolution	The ANRE Agrologist may find conflict resolution skills to be beneficial when dealing with multiple stakeholders. The practitioner should build competency-based skills in communication, negotiation and third-party interventions, including interest-based mediation. Agrologists may develop mediation skills on the job, or they may access adult learning courses as part of their Continuing Competence Program.
Asset valuation and assessment	Asset-based valuation is a form of valuation in business that focuses on the value of a company’s assets or the fair market value of its total assets. The ANRE Agrologist may find their background and experience particularly beneficial either to assist qualified practitioners in the evaluation of agricultural assets or, if appropriate additional training and designation is obtained (for

	<p>example as offered by the Appraisal Institute of Canada), to provide an opinion of market value for assets such as land, buildings and equipment. Assets are evaluated, and the fair market value is obtained. Agrologists may use this technique to work out a property's market worth for landowners, or in valuing a business, equipment, or livestock. Asset valuation requires the ANRE practitioner to obtain the needed knowledge, as well as experience, accuracy, and attention to detail.</p>
Data collection, analysis and interpretation	<p>Recommendations and advice depend on quality data and the ability to access data. Data needs to be collected according to set protocols. Practitioners recognize the benefit of organizational skills and record keeping management; they subscribe to the practice of quality control management and best practices; and, they ensure records and files are backed-up, decipherable to others and enduring.</p>
Understanding agricultural production systems and operations	<p>Basic knowledge of livestock, crops and/or equipment is necessary to develop client relationships and communicate effectively. ANRE Agrologists will need to work closely with other Agrologists who specialize in the Crop Production and Livestock Production practice areas if additional knowledge or advice is required by the client. It is important for the practitioner be aware and conversant in a client's farm operations and equipment. An understanding of the annual cycle of agricultural production systems and their operation is essential to provide professional advice that is timely and relevant to the operational life-cycle.</p>
Understanding natural systems functions and values	<p>Natural resources can have ecological, social, or economic values that can have effects on several levels (i.e. internal, local, regional, and global). Practitioners must be able to assess values of natural resources as part of economic models addressing sustainability. To do this it is important for the Agrologist to have an understanding of how natural systems are organized and how they function. In addition, changes over time and time sensitive variations in annual life-cycles of natural systems must be considered in the overall assessment of value within economic models.</p>
Documentation	<p>Practitioners should strive to develop a system to track recommendations that are made, especially when no monetary exchange takes place. In the event of a complaint, the onus is on the practitioner to document and provide supporting evidence for the recommendation.</p>
Reporting	<p>ANRE Agrologists should consistently turn out reports that support good decision making and are a solid basis</p>

	for monitoring, evaluating, and learning. Practitioners should set reporting objectives and select the most appropriate data collection methods. Reports must show proper analysis of the data and draw appropriate conclusions. Agrologists should plan their writing around the report objectives and reader's needs, organize their ideas in a logical, persuasive way, and communicate clearly to clients and/or stakeholders.
Providing advice and making recommendations	Making recommendations is a key part of professional practice within the PA (e.g. financial, business operations, economic etc.). Practitioners must be aware and knowledgeable of existing and new products in the market place, develop a network of contacts within industry that provide a conduit to new information and products, and understand limitations and fit of new financial products and economic strategies within a client's operation. Agrologists must be conversant in recommendations of use for any products discussed or suggested and the responsibility that is bestowed upon the professional. In addition, practitioners must be familiar with and be able to use a variety of technology driven decision making tools.
Business systems and governance	An ANRE Agrologist will fully understand how corporations, partnerships, cooperatives and other business systems operate. They will work closely with other professionals for design, execution, operation and end of life issues of a business entity. Agrologists in the PS will be aware of the annual cycle of business systems and offer timely advice relevant to the issue at hand.
Ethical practice	Members adhere to the Code of Ethics for the profession as they make recommendations to their clients. The Code of Ethics states, " <i>The Profession of Agrology demands integrity, competence and objectivity in the conduct of its members while fulfilling their professional responsibilities to the public, the employer or client, the profession and other members.</i> " (See Appendix B)

## 5. PERFORMANCE REQUIREMENTS

In addition to the General Practice Standard that applies to all AIA members (see Appendix), specific performance requirements have been developed for this PA. This practice standard identifies knowledge, work experience and skill set requirements for competent practice and defines the performance expected of regulated members participating in the practice area.

The following performance requirements outline the expectations of the professional practicing within the *Agricultural and Natural Resource Economics* PA. Failure to comply with these expectations may be considered as constituting unprofessional conduct under the Agrology Profession Act.

**Regulated members stay current with research, legislation, directives, guidelines, industry standards and other reference documentation related to Agricultural and Natural Resource Economics.**

Regulated members:

- Regularly review the reference material used to support their practice and obtain most current versions when available.
- Attend and/or provide presentations at conferences workshops and updates, related to Agricultural and Natural Resource Economics.
- Communicate with regulators, educators and other practitioners to ensure they remain current with current Agricultural and Natural Resource Economics knowledge and trends.

**Regulated members understand the limits of their knowledge, skills and experience and seek the expertise of other professionals where necessary.**

Regulated members:

- Make appropriate economic, practical and logistical decisions based on their education and experiential knowledge in Agricultural and Natural Resource Economics.
- Apply their skills and use sound judgement in an ethical manner.
- Seek advice and input from other professionals when their expertise is insufficient to make competent decisions and recommendations.

**Regulated members clearly understand their role within the practice area.**

Regulated members:

- Clearly understand their role in the practice area, represent themselves as such and do not exceed the boundaries of that role.
- Only sign and seal those plans, reports, and other documents for which the members are professionally responsible, and which were prepared by or under the direction of the member.

**Regulated members clearly understand the economic, environmental and social impacts of their recommendations to clients.**

Regulated members

- Understand the economic impact of their recommendations to their client(s) aiming to leave a client in a better financial, environmental and social impact position than before the recommendation was made.

**Regulated members strive for continuous improvement.**

Regulated members:

- Seek advice from other professionals to enhance their knowledge of Agricultural and Natural Resource Economics practices.
- Participate in knowledge sharing with other members to advance professional practice in Agricultural and Natural Resource Economics.
- Document best management practices in Agricultural and Natural Resource Economics and implement these practices where feasible.

- Focus their CCP activities to improve their practice, through identification of deficiencies and/or new knowledge areas wanted to be gained.

**Regulated members review the requirements of this practice standard and address any practice deficiencies through their ongoing continuing competence program.**

Regulated members:

- Conduct self-assessments based on education, work experience, skill set, and performance requirements indicated within this practice standard.
- Review their self-assessment with a senior qualified professional.
- Identify any deficiencies and develop a plan to address them.
- Participate in the AIA continuing competence program as required by the *Agrology Profession Act*.
- Discuss this practice standard with their fellow colleagues working within the practice area.
- Provide feedback and/or suggestions to the AIA regarding this Practice Standard.

## 6. RECOMMENDED READING MATERIAL

The following is a list of some recommended reading material relevant to the *Agricultural and Natural Resource Economics* PA in Alberta. It is not intended to be an exhaustive list.

Agriculture Financial Services Corporation Resources <a href="https://afsc.ca/resources/">https://afsc.ca/resources/</a>
Agroindustrial Investment and Operations, James G. Brown with Deloitte & Touche, Economic Development Institute of The World Bank, 1994
Alberta Agriculture Custom Rate Surveys <a href="https://www.alberta.ca/custom-rates.aspx">https://www.alberta.ca/custom-rates.aspx</a>
Appraisal Institute of Canada <a href="https://www.aicanada.ca/">https://www.aicanada.ca/</a>
Bank of Canada <a href="https://www.bankofcanada.ca/">https://www.bankofcanada.ca/</a>
Canfax <a href="http://www.canfax.ca/Main.aspx">http://www.canfax.ca/Main.aspx</a>
Canadian Cost-Benefit Analysis Guide: Regulatory Proposals, Treasury Board of Canada Secretariat, 2007. <a href="https://publications.gc.ca/site/eng/456648/publication.html">https://publications.gc.ca/site/eng/456648/publication.html</a>
Economic Analysis of Agricultural Projects, J. Price Gittinger, World Bank, 1972
Farm Budgets From Farm income Analysis to Agricultural Project Analysis, Maxwell Brown, World Bank Staff Papers No. 29, 1979
Farm Credit Canada Farmland Values Report <a href="https://www.fcc-fac.ca/en/knowledge/ag-economics/farmland-values-report.html">https://www.fcc-fac.ca/en/knowledge/ag-economics/farmland-values-report.html</a>

Farm Credit Canada Resources <a href="https://www.fcc-fac.ca/en/knowledge/ag-economics.html">https://www.fcc-fac.ca/en/knowledge/ag-economics.html</a>
Government of Alberta Agriculture Statistics Yearbook <a href="https://open.alberta.ca/publications/1927-4106">https://open.alberta.ca/publications/1927-4106</a>
Government of Alberta Agriprofits <a href="https://www.alberta.ca/agriprofits.aspx">https://www.alberta.ca/agriprofits.aspx</a>
Government of Canada Census of Agriculture <a href="https://www.statcan.gc.ca/eng/ca2016">https://www.statcan.gc.ca/eng/ca2016</a>
Intercontinental Exchange (ICE) <a href="https://www.intercontinentalexchange.com/index">https://www.intercontinentalexchange.com/index</a>

## 7. SUMMARY

This document describes the knowledge requirements, work experience, skill set and performance expectations for professional practice within the *Agricultural and Natural Resource Economics* PA for the Agrology profession. It provides direction to members of the Alberta Institute of Agrologists who are practicing or who wish to practice within this PA to ensure they are qualified to conduct work in this area.

Members practicing within this PA are required to review this document and assess their knowledge, work experience, skill sets and performance against the requirements and expectations herein. Where deficiencies are noted it is expected that members will develop a plan to address these deficiencies through their individual continuing competence programs. Members are expected to understand the limits of their own knowledge and expertise and seek additional advice and professional support as required.

This practice standard will be one of the tools the Institute will use in conducting practice reviews or investigating a complaint about a member. It is the responsibility of the member to be aware of the contents of this practice standard.

## APPENDIX A

The following General Practice Standard applies to all registered members of the AIA. This General Practice Standard is to be adhered to as well as this detailed practice standard for the *Agricultural and Natural Resource Economics* PA.

# **General Practice Standard for All Registered Members of the Alberta Institute of Agrologists**

The General Practice Standard applies to all registered members of the Alberta Institute of Agrologists. The purpose of the document is to describe the duties and responsibilities that are incumbent upon each member of the profession. It is the responsibility of each registered member to conduct themselves in accordance with these standards. Registered members will be measured against these standards by the Institute, the public, employers, clients and colleagues. The Standard describes the values of the Institute and the profession, and the expectation for each registered member.

## **Professional Responsibility**

Each registered member of the Alberta Institute of Agrologists (AIA) is required to uphold the standards and reputation of the agrology profession and professional principles.

### **Indicators**

The registered member has a duty to protect the public and to conduct his or her work with an appropriate standard of care.

### **Standard of care**

Standard of care is the legal duty to exercise the watchfulness, attention, caution and prudence that a reasonable professional in the same circumstances would exercise. If a professional's actions do not meet this standard the professional may be found negligent or to have committed unprofessional conduct.

The registered member is personally responsible and accountable for ensuring that his or her agrology practice and conduct meet the requirements of the practice area(s), practice standards, current legislation, regulations and policy.

The registered member will practice with honesty, integrity and respect, and comply with the AIA's Code of Ethics.

The registered member will sign or co-sign a report only if he or she is willing to accept full responsibility for the contents of the report.

The registered member may delegate portions of the work to competent practitioners under the registered member's direct supervision. The registered member will accept responsibility for that work and provide additional quality assurance/quality control to



determine the sufficiency of that work. Registered members will not sign any document for which they will not take full responsibility for the contents of the document.

The registered member will hold the public interest paramount and endeavour to put service above gain and excellence above quantity.

## **Competency**

The registered member will practice only in an area(s) where the member has demonstrated competence.

### **Indicators**

The registered member will only practice unsupervised in the practice area(s) where the member's education, skills, and experience fulfill the practice area qualifications and the registered member believes he or she is competent. If a registered member's education, skills, and experience do not meet the requirements of the practice area, the member will practice *only* under the direct supervision of a qualified, registered professional who is competent to do the work and who will give appropriate direction to the registered member.

The registered member, if called upon by the profession, a judicial review or a court ordered request, must be able to clearly demonstrate the knowledge and skillsets gained to enable them to practice in any practice area(s) in which the member deems himself or herself competent to practice.

The registered member will undertake continuing professional development (CPD) with the majority of the CPD hours directly relevant to his or her practice area(s). The registered member commits to reporting his or her CPD activities on the member profile as activities are completed.

The registered member will continually update his or her scientific and standard industry practice knowledge related to the member's practice area(s).

The registered member will demonstrate critical thinking when planning, implementing and evaluating all aspects of the work and making any recommendations as a professional.

The registered member is able to show his or her reasoning in reaching decisions through accurate and clearly written documentation.

The registered member will advise the AIA of any changes to his or her practice area(s), particularly when a new practice area is chosen. The registered member will specify the knowledge and skills that have been acquired to support work in the new practice area.

## **Provision of Service to the Public, a Client or an Employer**

The registered member will promote the qualified, competent and ethical professional role and accountability of agrologists to the public, other professionals, and themselves.

### **Indicators**

The registered member will prepare accurate, concise and clearly written reports and correspondence that are appropriate for the intended audience.

The registered member will communicate clearly and respectfully with a variety of people, including his or her employer, colleagues, clients, members of the public and regulators.

The registered member will advise the client if the work is outside of his or her practice area(s) and if the member will be unable to fulfil the terms of reference for the work.

The registered member will make a referral to seek advice, and enter into collaborations with other professionals in situations which require expertise that extend beyond the member's competence.

The registered member will avoid situations where a conflict of interest exists or where the duties and loyalty owed by a member to one party likely will be, is, has been, or perceived to be, in conflict with the duties or loyalties the member owes to another party.

The registered member will extend public knowledge of their area of expertise whether it is in agriculture, the environment, food sciences or life sciences, and promote factual and accurate statements on matters regarding these areas.

### **Stewardship**

The registered member will advocate and practice good stewardship of all agricultural and environmental resources based on sound scientific principles.

#### **Indicators**

A registered member will consider monetary issues, social values, rational application of sound science, lesson of valid experiences, economic impacts to the geographic region, and impacts on future generations when conducting his or her work.

A registered member will inform the client or employer of any action planned or undertaken by the client or employer that he or she believes is detrimental to good stewardship or in breach of known legislation, regulations or policies.

### **Safety**

The registered member understands his or her obligation for promoting public and worker safety and considers the health of the environment, health of the consumer, industrial safety, construction safety and the general operational safety of projects.

#### **Indicators**

A registered member will demonstrate concern for the immediate and long-term direct effects of agricultural and environmental practices on the safety of workers by being aware of, and evaluating risks.

A registered member will balance the claims of producers and needs and wants of a consuming public against the potentially competing claims for safety of the environment and the interests of individuals and businesses affected by their proximity to agricultural operations. The registered member is aware that the public expects and demands a safe supply of food, not only for current use but also for future generations.

## APPENDIX B

### CODE OF ETHICS

*“The Profession of Agrology demands integrity, competence and objectivity in the conduct of its members while fulfilling their professional responsibilities to the public, the employer or client, the profession and other members.”*

Members should be aware of any other laws and responsibilities in regard to other business and voluntary activities which may impact their ethical conduct.

#### **Guidelines to the Ethical Responsibilities of Agrologists**

The purpose of the following guideline is to clarify the intent of the Code of Ethics and the understanding of the nature of the professional obligations that arise out of the document. Throughout, it is recognized that membership is a right granted by the public to the regulated member (member) to practice Agrology in such a way that the public interest is served. It is also understood that, just as the individual member has an obligation to conduct business in an ethical and competent manner, colleagues and the Institute share the moral responsibility of protecting their Agrologists and the field of agrology against any unfounded and unjust criticisms.

#### **1) Among the regulated member’s professional obligations to the public are the responsibilities:**

*a) To practice only in those practice areas where the member’s training, ability, and experience make him/her professionally qualified.*

The public has given a right to the Professional with the trust and expectation that those activities are undertaken with competence. A member will not make misleading statements regarding his/her qualifications. A member will actively pursue professional knowledge upgrading specific to their practice area(s) in order to remain competent in his/her field of expertise. A member will make referrals to seek advice, and enter into collaborations with other professionals in situations which require expertise that extend beyond the individual member’s competence.

*b) To express a professional opinion only when it is founded on adequate knowledge and experience, and where the member has an understanding of the situation and context in which this opinion is being offered.*

Members must clearly distinguish among facts, assumptions and opinions in their preparation of reports and professional statements. Professional opinions should be clearly stated and should include clear indications of the constraints that apply to the opinion, and the relevant qualifying circumstances, facts and assumptions.

Members should exercise care that work they conduct cannot in any way be seen to support or make possible any morally suspect or illegal purposes. In the extreme, this caution might cause a member to refrain from association with enterprises or individuals whose objectives and probity are subject to questions.

Members who act as expert witnesses and provide opinion evidence for the purpose of litigation should not take a partisan position. Agrologists must provide evidence as impartial experts and must not do so as advocates of their client or employer. While acting as an expert witness, a member’s role is to assist the judge/jury/panel with technical matters which are beyond the expertise of the tribunal.

*c) To advocate and practice good stewardship of all agricultural and environmental resources based on sound scientific principles(s).*

Stewardship requires making complex choices based on a variety of relevant but not necessarily compatible factors. Good stewards must consider, but not necessarily be limited to: monetary matters, social values, the rational application of sound science, the lessons of valid experience, impacts on the economic health of the community at large, and the impacts on future generations. Because of the position of public trust, a member's duty is to uphold professional principles above and beyond the demands of employment.

Conflict may arise between a member's duty to uphold professional principles and the duty to serve the needs of an employer or a client. Members must distinguish between the role they play as Agrologists and the role management plays. Managers have prerogatives and privilege for making decisions based on a wider range of constraints than those that might be appropriate for an Agrologist. The member must not confuse the role of providing others with information upon which to base a decision with the role of being responsible for making the decision him or herself.

If a member believes there is a serious conflict between the requirements of employment and a member's professional principles, a member should inform/or consult the Registrar or any other appropriate persons about the conflict. Members may seek advice and support for the position from the Institute.

*d) To extend public knowledge of agriculture and the environment and to promote truthful and accurate statements on sustainable agricultural systems and environmental matters.*

Members should strive to develop appropriate involvement with schools, agencies and organizations insofar as such outreach activities can help ensure the dissemination and discovery of sound and appropriate agricultural environment knowledge. Members should attempt to correct misleading or erroneous statements on agricultural matters whenever and wherever such statements are encountered.

*e) To have proper regard for the safety of others in all work.*

Members must understand their obligation for promoting safety. Members should consider the impact the exercise of their professional duties will have upon the health of the environment, industrial safety, and health of the consumer, construction safety and the general operational safety of completed projects. Members must demonstrate concern for the immediate and long-term direct effects of agricultural and environmental practices on the safety of workers by being aware of and evaluating risks.

The public expects and demands a safe supply of food, not only for current but also for future generations. Members must balance the claims of producers and consuming public against the potentially competing claims for safety of the environment and the interests of individuals and businesses affected by their proximity to agricultural operations.

## **2) A member's responsibility to the client or Employer is:**

*a) To act conscientiously and diligently in providing professional services.*

Members should endeavour to put service above gain and excellence above quantity. If a member becomes aware of errors or omissions in his/her work, he/she must report the same to his/her client or employer, and immediately work to remedy such errors or omissions.

Expect as required by law, to maintain the confidentiality of client and employer information unless given the explicit consent of the client or employer.

*b) A member should consider all information received from a client or employer as confidential unless such information is in the public domain.*

Information obtained during and specific to a professional contract situation is confidential and must not be disclosed to others or used by the members outside that contracted situation without

the consent of the client or employer. However, technical expertise gained by a member through work may be used in subsequent projects without consent from other parties.

*c) To obtain a clear understanding of the client's or employer's objectives.*

Members must clearly understand the objectives of the client or employer. Members must make inquiries regarding such objectives to ensure that professional services are provided in the context of complete and accurate information. It is recommended that all oral communication that is material to the delivery of professional services be confirmed in writing.

*d) To inform the client or employer of any action planned or undertaken by the client or employer that a member believes is detrimental to good stewardship or in breach of known laws or regulations.*

It is a member's duty to advise a client or employer of the consequence of questionable actions and inform the client or employer of the facts that lead the member's belief that the action is detrimental to good stewardship.

*e) To refuse any assignment that creates a conflict of interest.*

A conflict of interest exists where the duties and loyalty owed by a member to one party are, are likely to become, or to a reasonable, informed and objective observer would appear to be in conflict with the duties or loyalties the member owes to another party.

A member should not accept an assignment in which he/she has a personal or business interest unless that interest is disclosed and approved by the client or employer.

Where a member is in a position of providing professional services to more than one party with different interests in the same or related matter, the member must explain the significance of acting for more than one party to each of the affected clients or employer(s) (the parties) and obtain the written consent of the parties to continue working for more than one party. If any of the parties fail to give their consent the member must then determine whether it is possible to act on behalf of a subset of the parties without conflict. If conflict cannot be eliminated by acting only on behalf some of the parties, then the member should advise all the parties that he/she cannot continue to act for any of them in the matter that generates the conflict of interest.

Members must also advise the parties that no information received in connection with the common matter from the one can be treated as confidential so far as any of the other parties are concerned.

*f) To not accept compensation from more than one employer or client for the same work, without the consent of all.*

Members need to distinguish between the data or product, which becomes the property of the client; and the process or technical experience, which remains the property of the member.

### **3) The Agrologist's Responsibility to the Profession is:**

*a) To inspire confidence in Agrology by maintaining high standards in conduct and work.*

A member must keep in mind that the work of an Agrologist is continuously open for public scrutiny and it is the responsibility of each individual to build and maintain a positive image of the field and the profession. Not only must a member perform his/her duties of employment to a high level of excellence, but the conduct of that member must also be of high standard.

*b) To support activities for the advancement of the profession.*

Members have an obligation to participate in the activities of the Institute (i.e., meetings, elections, holding office, mentoring) as the individual members situation and opportunities allow.

Members need to be constantly aware they are Agrologists and should, by their conduct, provide a positive image of the profession. Each member must be prepared to personally promote Agrology in personal contacts and communications, and to participate in specific promotional initiatives organized by the professional organizations.

*c) Where a member believes another individual may be guilty of infamous or unprofessional conduct, negligence or breach of the Agrology Profession Act or bylaws:*

to raise the matter with that individual and

if not resolved or if otherwise deemed necessary to inform the Registrar of the Institute in writing.

A member should ensure that the facts and understanding of the misconduct are correct. Consultation with a colleague or Registrar is encouraged if it may help clarify the issue. Members should make every effort to raise and resolve the issue in a candid and professional manner. Agrologists should note that only in exceptional circumstances is it inappropriate to raise such a matter with the other member if done courteously and politely.

*d) To state clearly on whose behalf professional statements or opinions are made.*

A professional opinion or statement prepared by an Agrologist is for a specific situation and set of circumstances. The content of a professional opinion should include the context in which it is made.

*e) To sign and seal only those plans, reports, and other documents for which the members are professionally responsible and which were prepared by or under the direction of the member.*

Members who affix their seal and/or signature assume responsibility for and understand the document. The responsible professional must have exercised sufficient control and association with the document so he/she can sign and seal the document based on personal knowledge. Members will not associate themselves with documents, reports or statements that misrepresent, distort or omit material facts. Members should familiarize themselves with information that details the procedures and protocols that are associated with the use and practice of sealing professional works.

#### **4) A member's professional responsibility to other members is:**

*a) To abstain from undignified or misrepresentative public communication with or about members.*

Conduct between members should be characterized by respect, courtesy, honesty, and good faith. Direct and honest criticism between professionals is acceptable and professional debate is encouraged when characterized by fairness and propriety.

Members should be courteous when criticizing the work of another member and be as careful with a colleague's reputation as they would be with their own. Members will advise another regulated member in advance if they are reviewing/critiquing the other's work for a specific project. An individual member will not make statements or representations on behalf of the Institute without prior authorization.

*b) To give credit for professional work to whom credit is due.*

Members should always acknowledge the work and contributions of others when directly using that work in whole or in part. Members should clearly understand and appreciate that the unpaid use of marketable processes and technology developed by another member could jeopardise that other member's livelihood.

Members will follow the rules and law of copyright. Members will secure releases for any data, process (es), and publication(s) obtained from written or electronic sources.

*c) To share knowledge and experience with other members.*

Each member has a duty to new members and to the future of the Institute to be available as a mentor for new members. Individual members should offer and seek out constructive professional discussion and debates with colleagues to maintain a vibrant and progressive profession.

Code of Ethics, Revised September, 2010