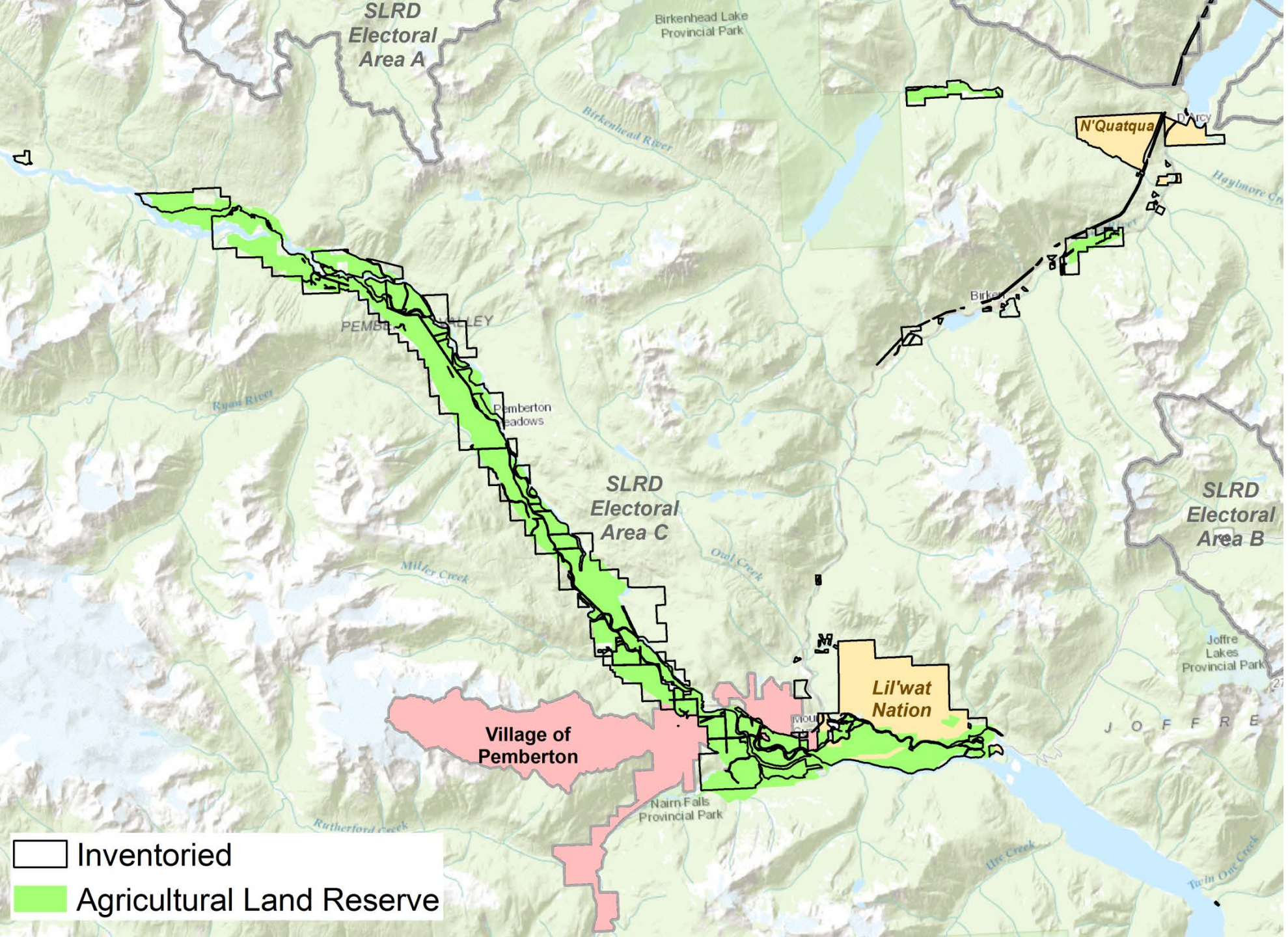


Pemberton Valley

Agricultural Land Use Inventory 2019

Angela Boss
Regional Agrologist

Corrine Roesler
ALUI Lead

BRITISH COLUMBIA | Ministry of Agriculture

August 26 2020

ALUI's ARE

AN INVENTORY OF:

- Land Use
- Land Cover
- Agricultural Activities
  - Livestock
  - Value added
  - Storage, compost, waste
- Crop Production Practices
  - Wind machines
  - Propane cannons
- Irrigation Systems

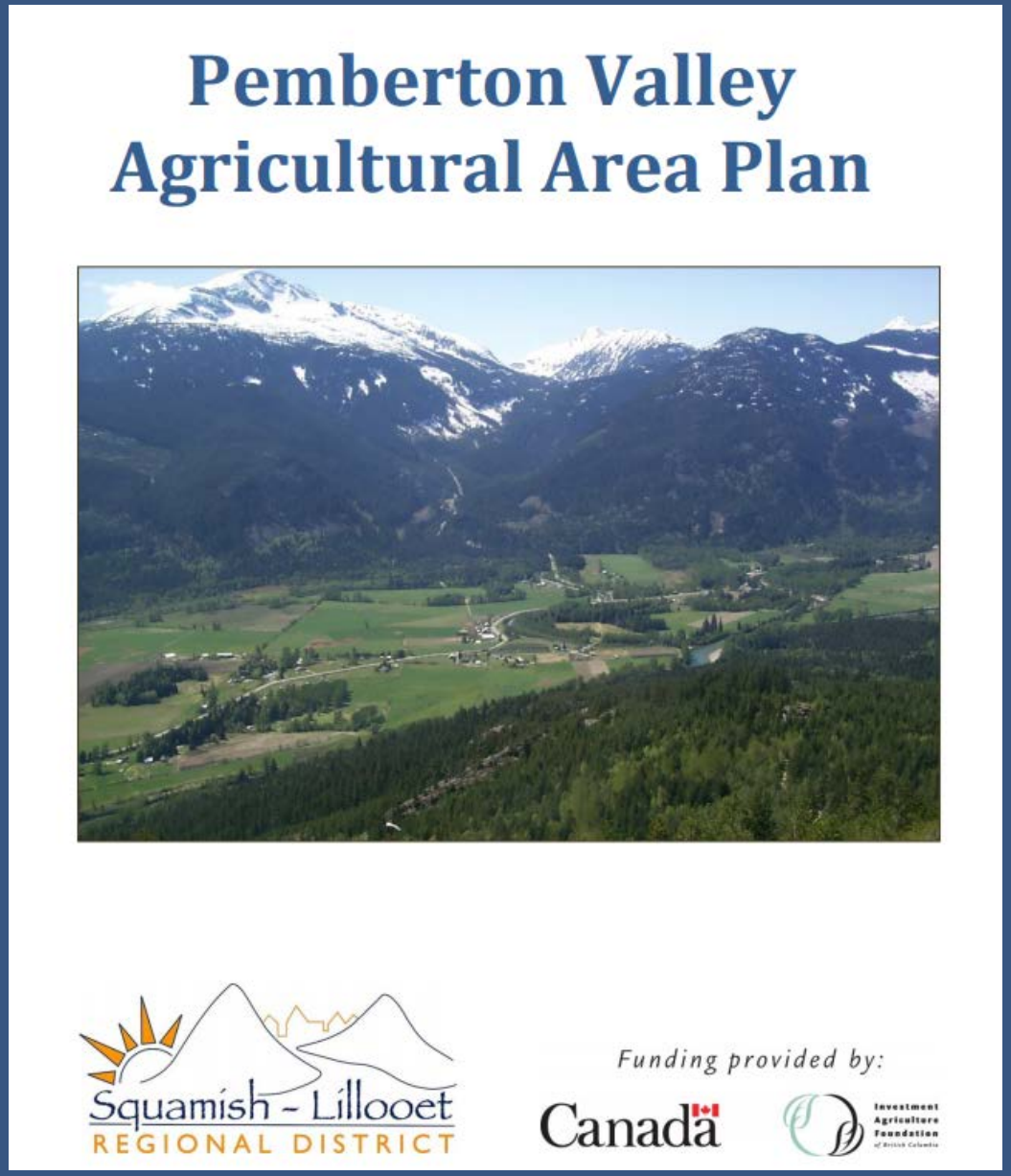
ON PARCELS:

- In the ALR
- Outside ALR with Farming

CENSUS OF AGRICULTURE	AGRICULTURAL LAND USE INVENTORY
Based on the “farm” unit	Based on the “parcel” unit
▪ farms and farm operators ▪ land tenure and land management ▪ crops and livestock ▪ financial measures	▪ biophysical land cover ▪ human land use ▪ residential use footprints ▪ crops, livestock, irrigation
Recurrence: every 5 years reveals long term trends	Recurrence: depends on need reveals changes since last snapshot
Source: Farm operator reporting	Source: entire ALR Ortho-photography & field surveys

IMPORTANCE OF ALUI

- Describes utilization of the ALR
- Informs policies and plans
- Provides baseline from which to measure performance of policies and plans
- Drives the Agriculture Water Demand Model



Pemberton Valley 2019 ALUI - partners

- $5,000 + $1,500 in-kind from SLRD
- $5,000 Investment Agriculture Foundation of BC
- $3,550 in-kind from BC Ministry of Agriculture
- $5,550 in-kind from Partnership for Water Sustainability in BC

SQUAMISH - LILLOOET REGIONAL DISTRICT

the partnership for water sustainability in bc

DELIVERED BY

Investment Agriculture Foundation of British Columbia

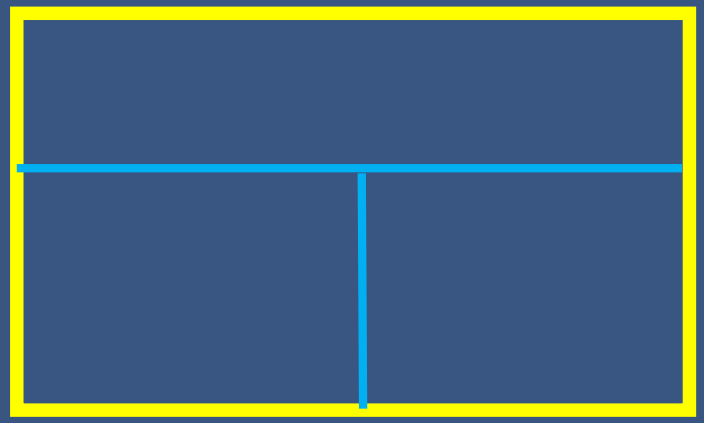
FUNDING PROVIDED BY

BRITISH COLUMBIA

Canada

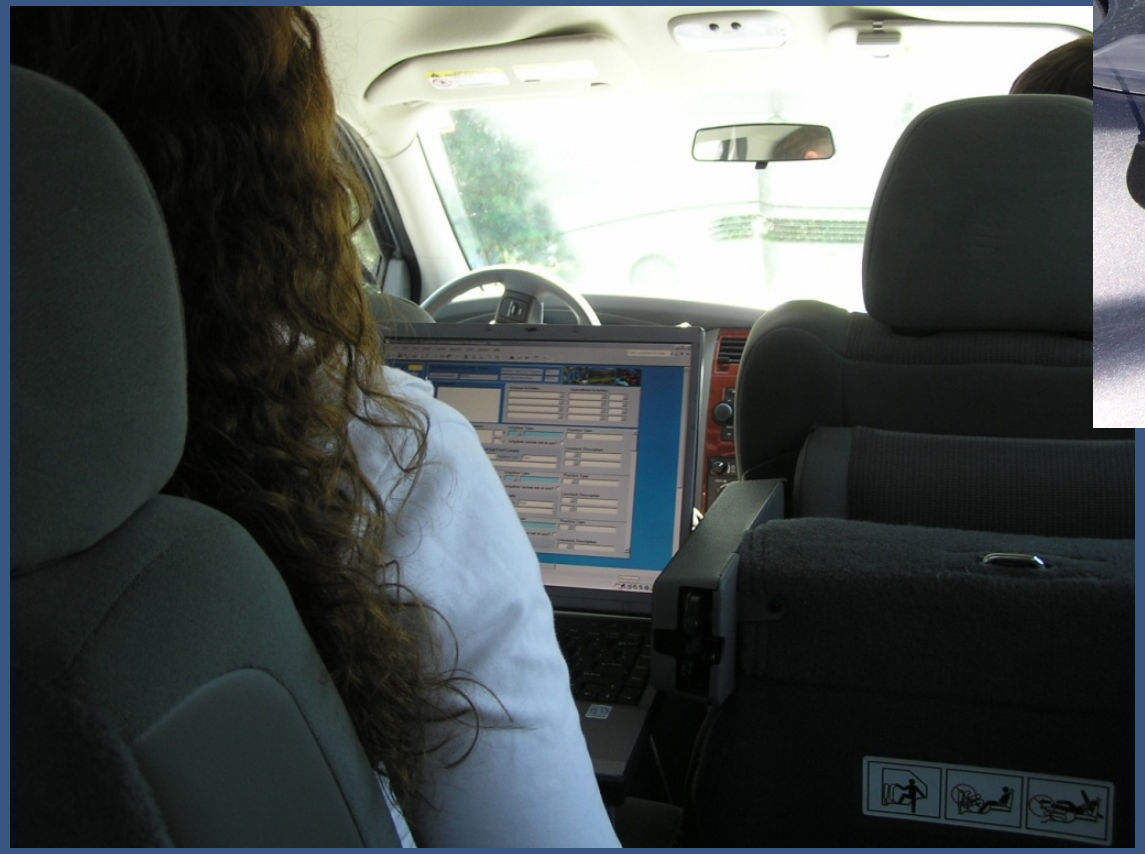
ALUI METHODOLGY

Cadastre



Land Cover

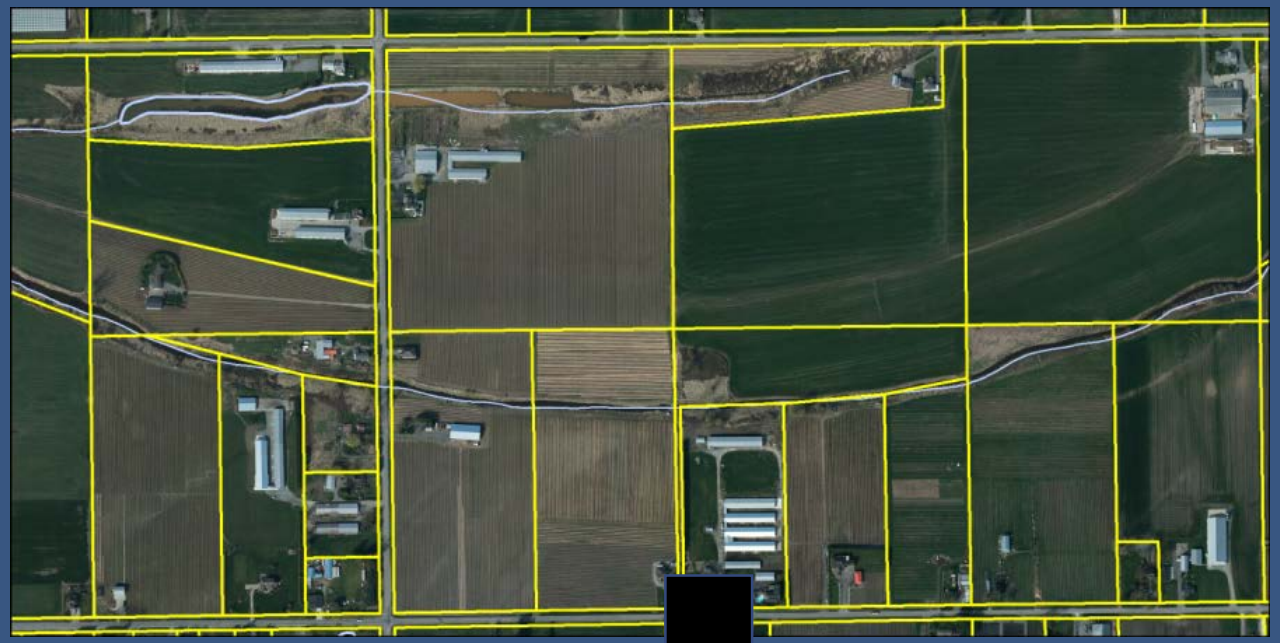
ALUI METHODOLGY

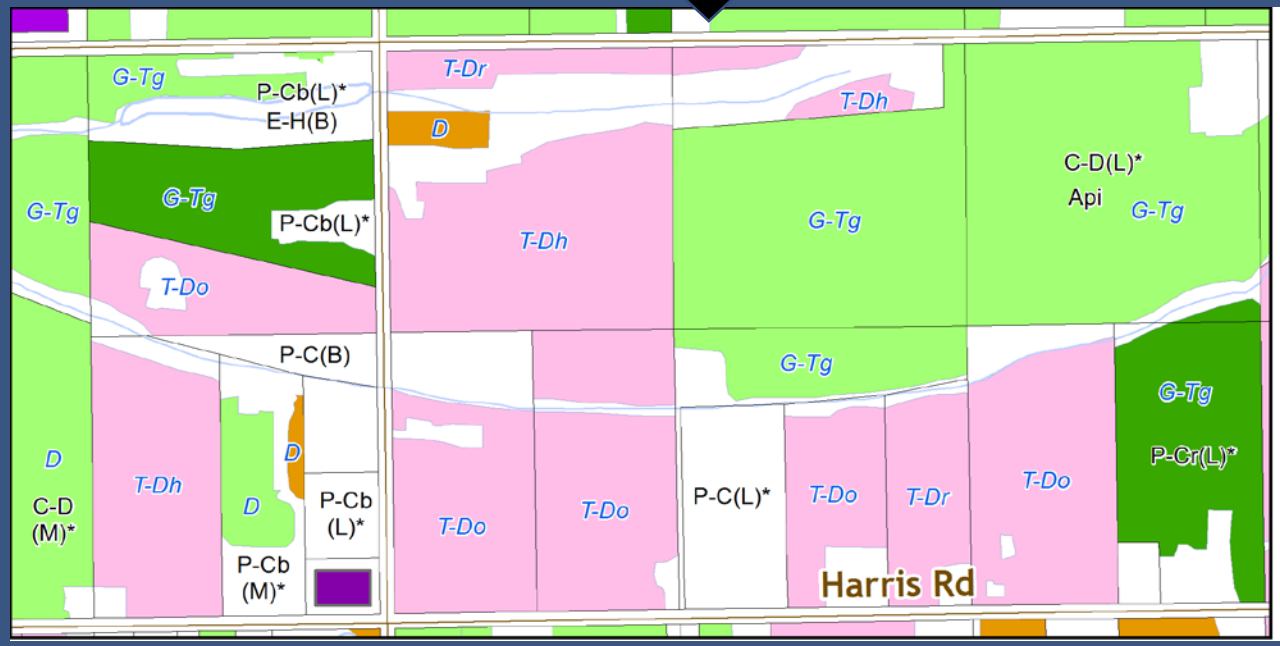


Windshield survey

RESULTING DATA

- Crops
- Irrigation
- Livestock
- Ag practices





Forage
Vines & berries
Vegetables
Nursery & tree plantations
Glass greenhouse

IRRIGATION

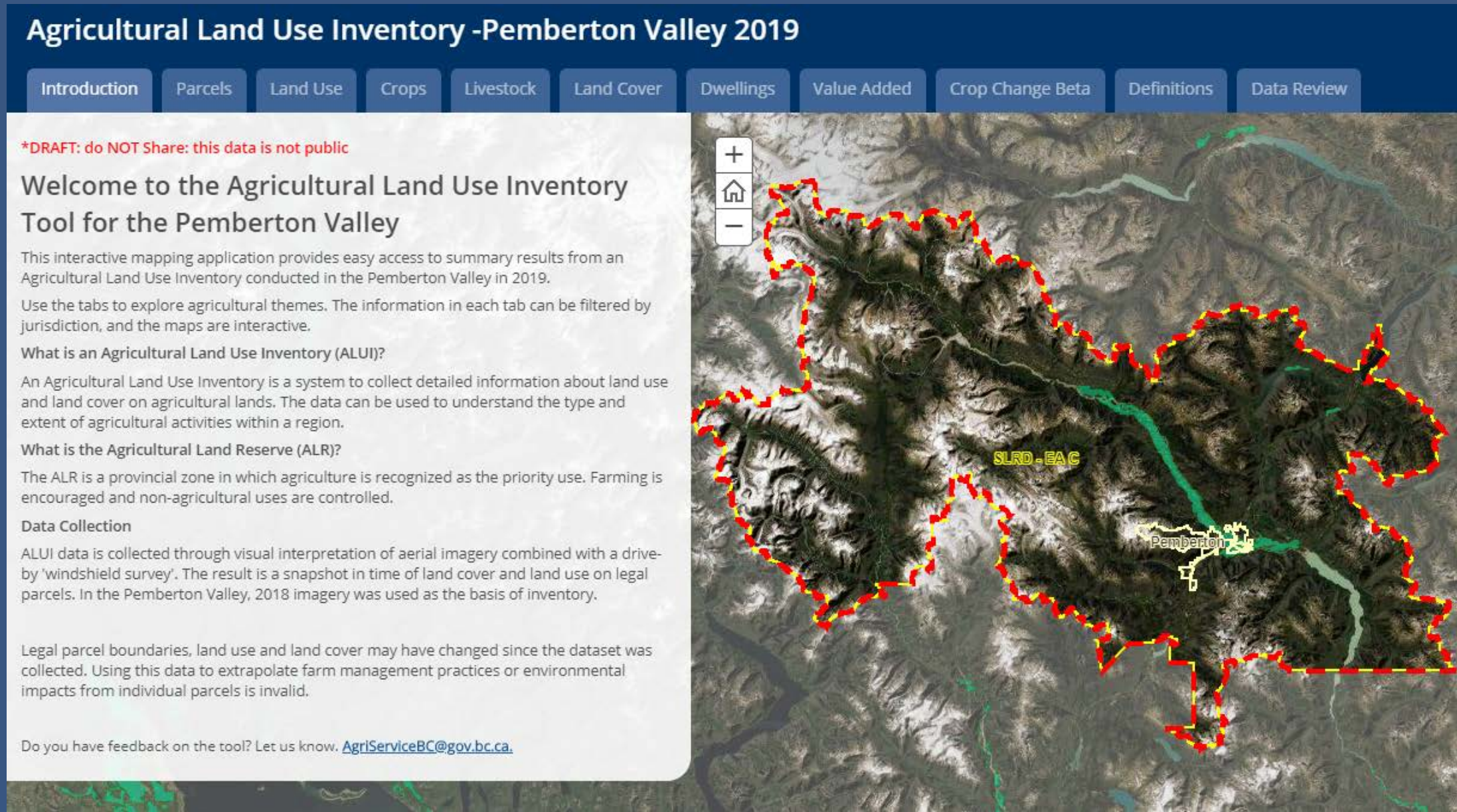
D	Sprinkler (default)
G-Tg	Travelling gun
T-Do	Trickle Drip emitter On ground
T-Dr	Trickle Spray emitter

LIVESTOCK

C-D	Conventional Dairy
P-Cb	Poultry - Chicken - Broiler
P-Cr	Poultry - Chicken - Breeder
E-H	Equine - Horses

SHARING RESULTS

- GIS data
- Web app
- Ag-in-brief



Agricultural Land Use Inventory -Pemberton Valley 2019

Introduction | Parcels | Land Use | Crops | Livestock | Land Cover | Dwellings | Value Added | Crop Change Beta | Definitions | Data Review

DRAFT: do NOT Share: data not public

ALR Parcel Availability

Use the selectors to filter the information shown on the right.
Filters can be used in any order.

1. Jurisdiction

All

2. Parcel Availability

- All
- Available but limited potential
- Available for farming
- Unavailable for farming
- Used for farming

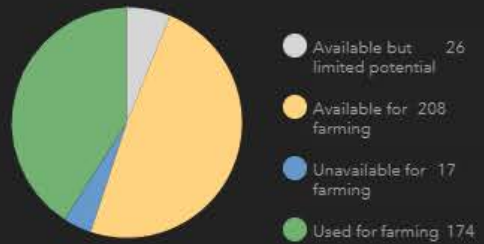
3. Parcel Size Category (Ha)

< 1 | 1 - 2 | 2 - 4 | 4 - 8 | 8 - 16 | 16 - 32 | 32 - 64 | 64 - 128 | >= 128

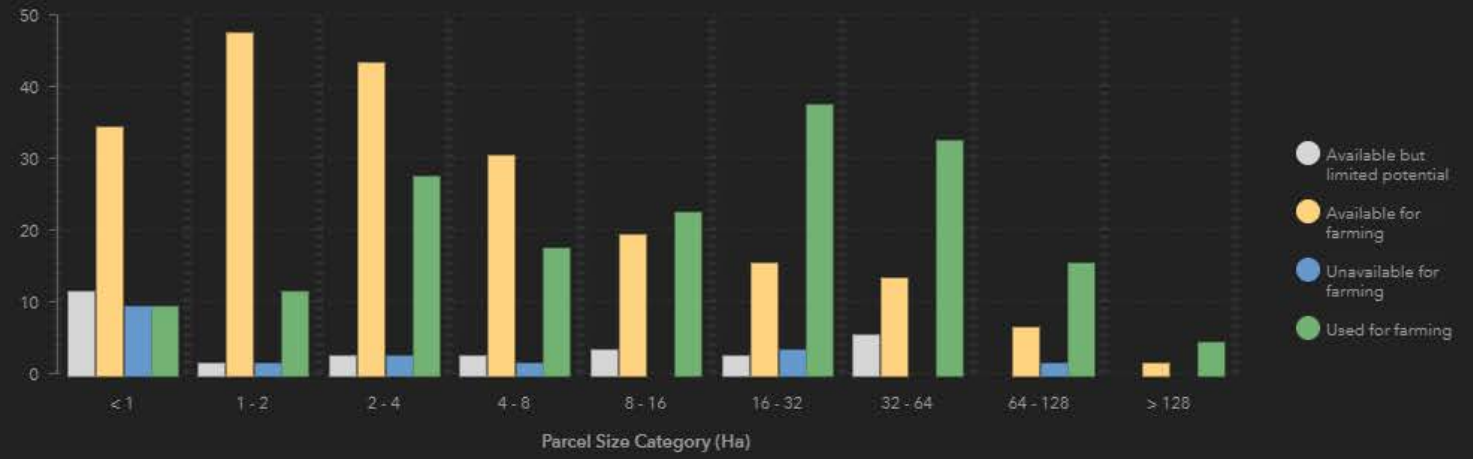
4. Land Use

All

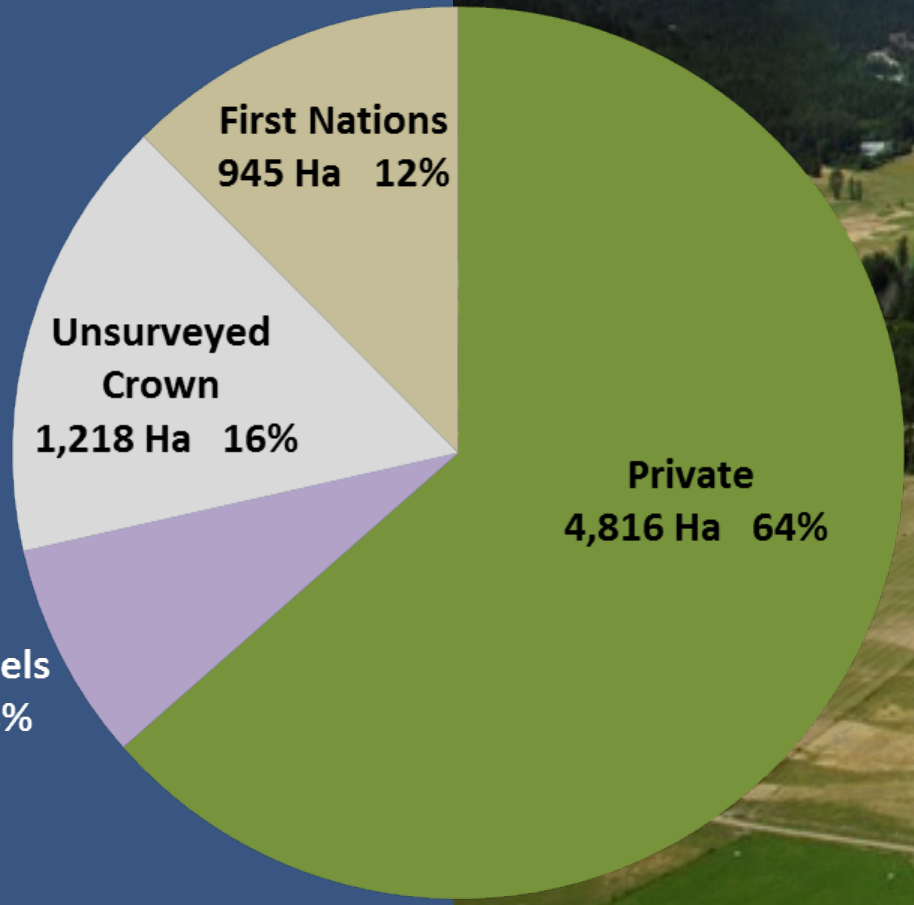
Parcel Availability (# of parcels)



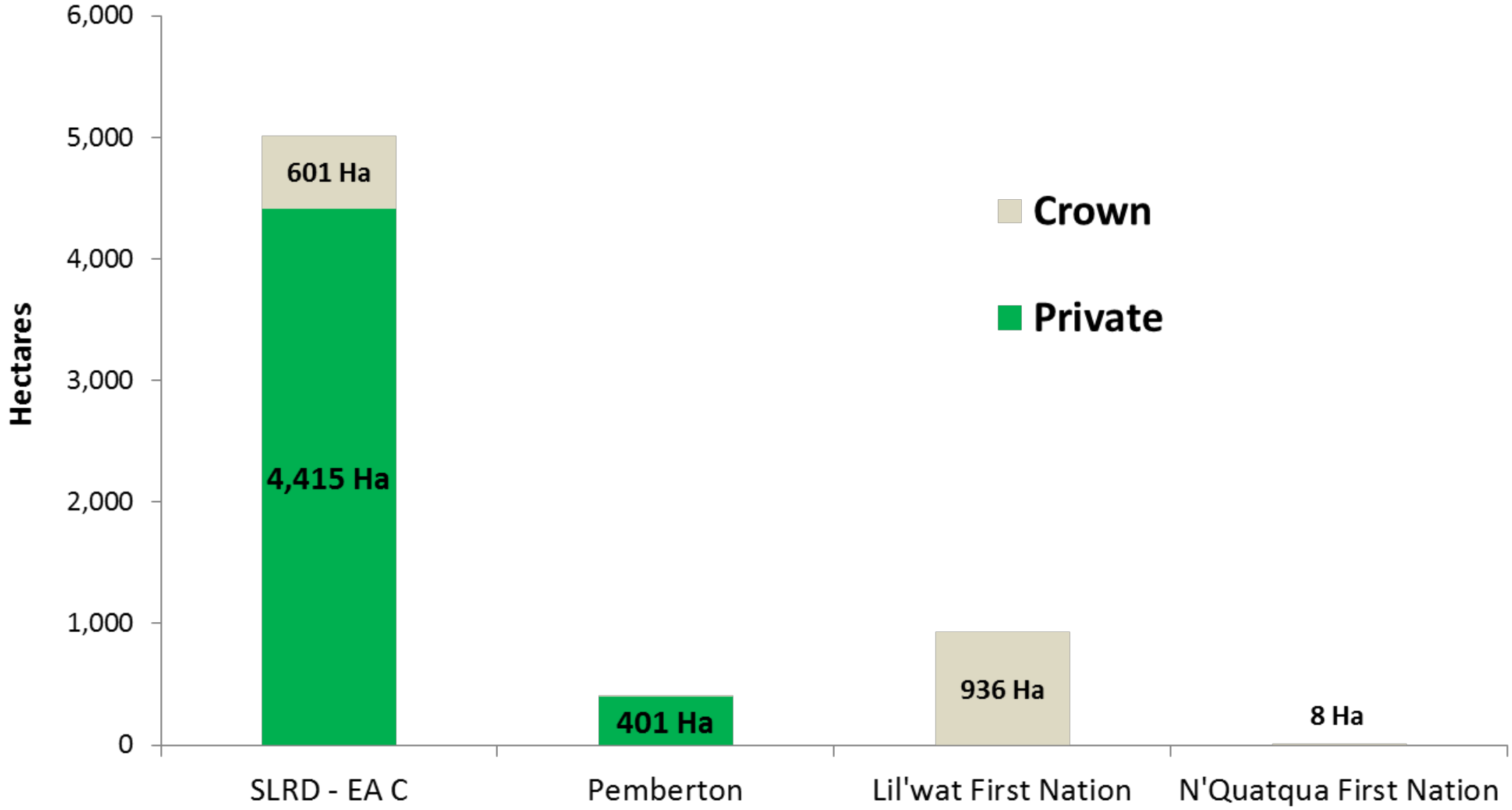
Parcel Size Distribution (# of parcels)



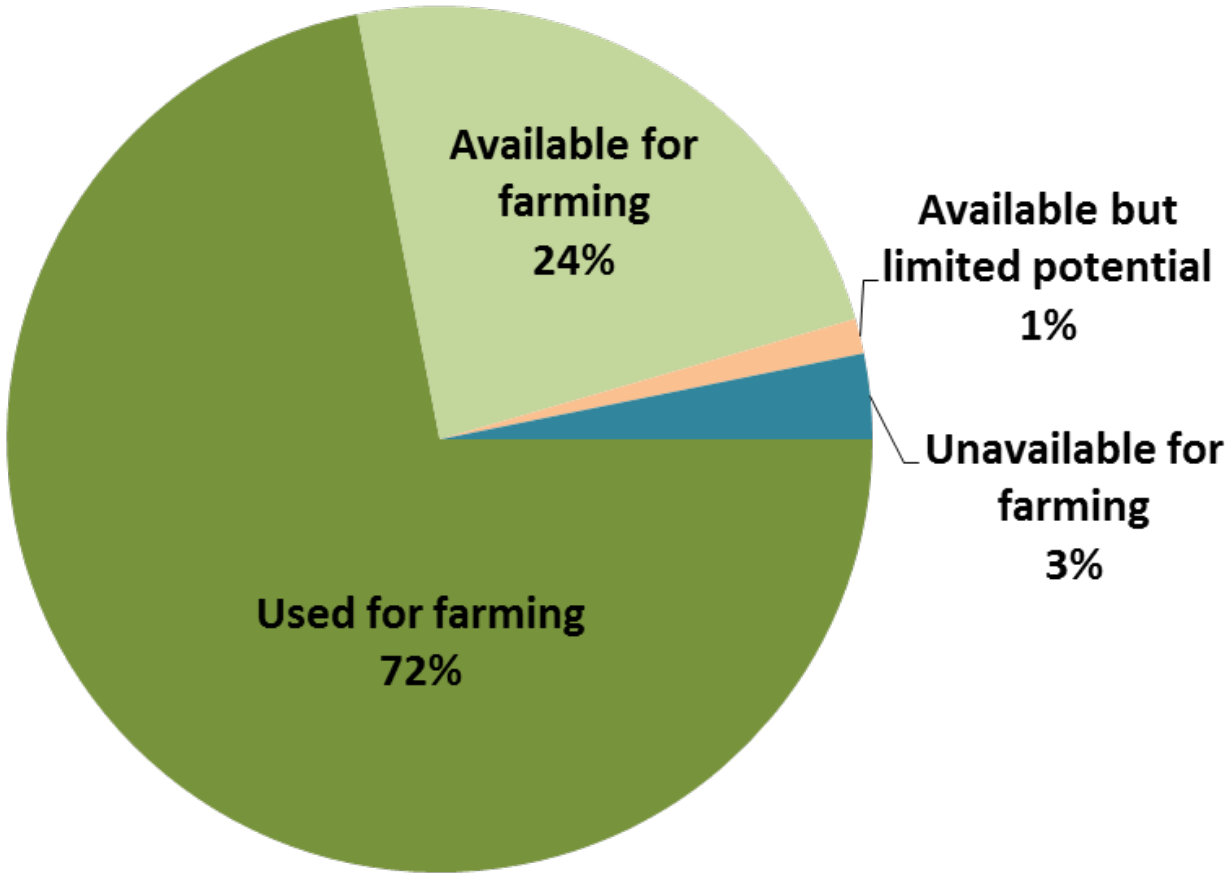
Agricultural Land Reserve



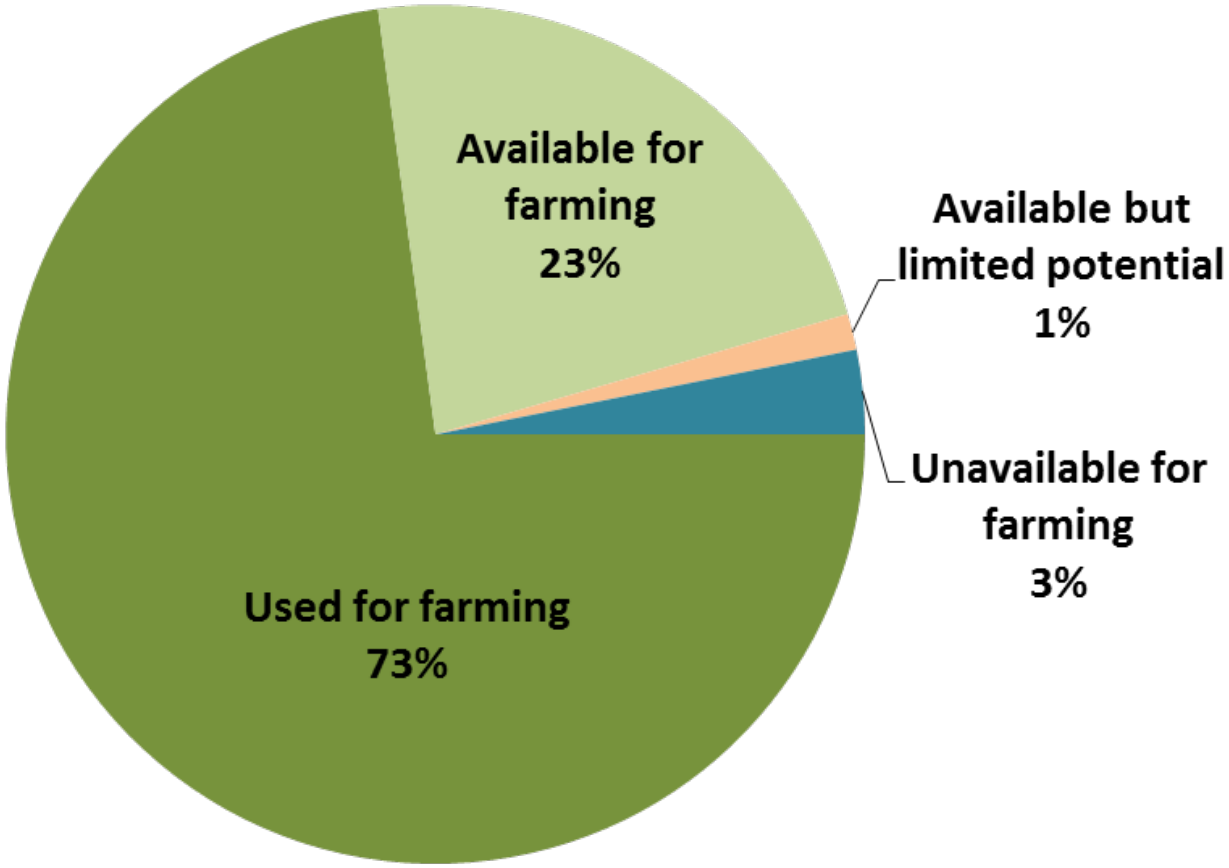
ALR - Ownership



ALR – Land Use

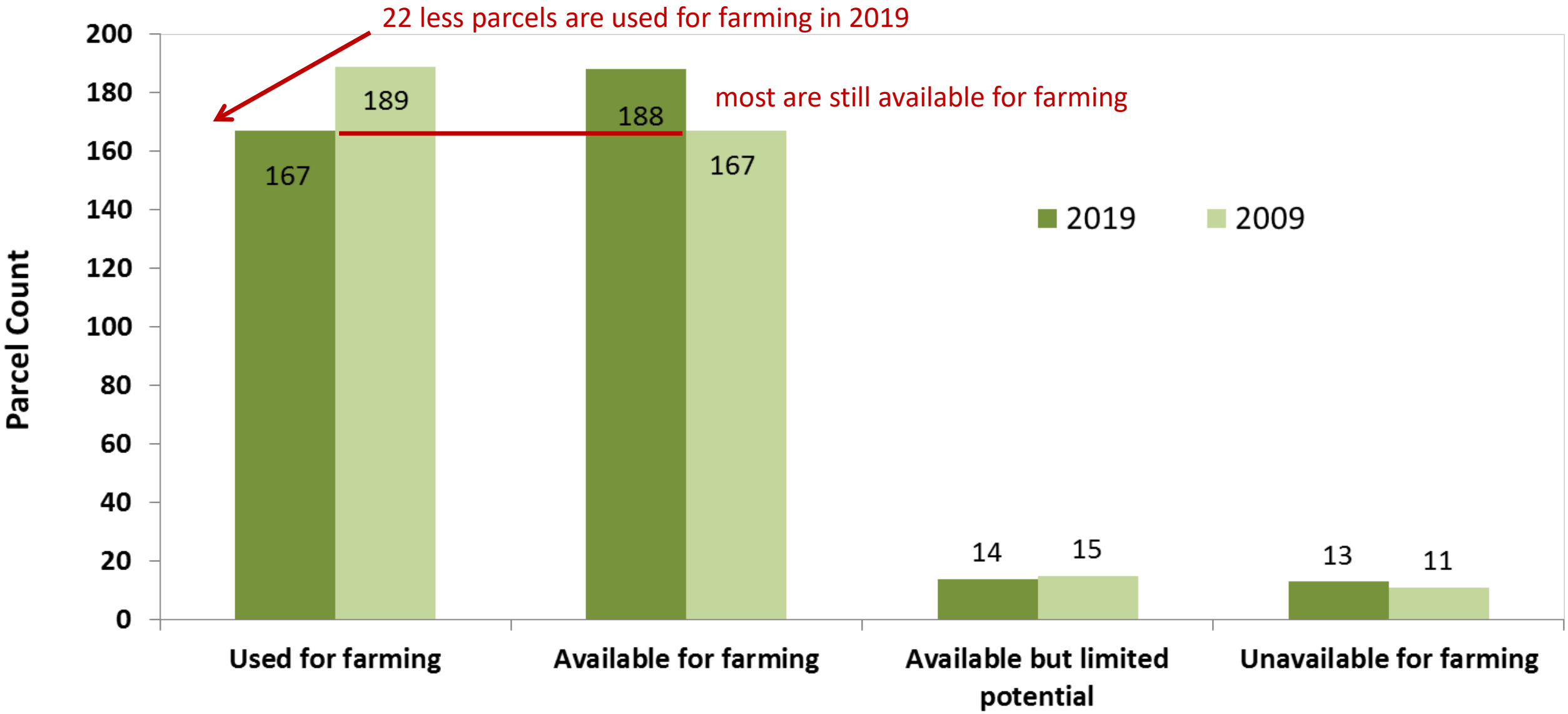


2019

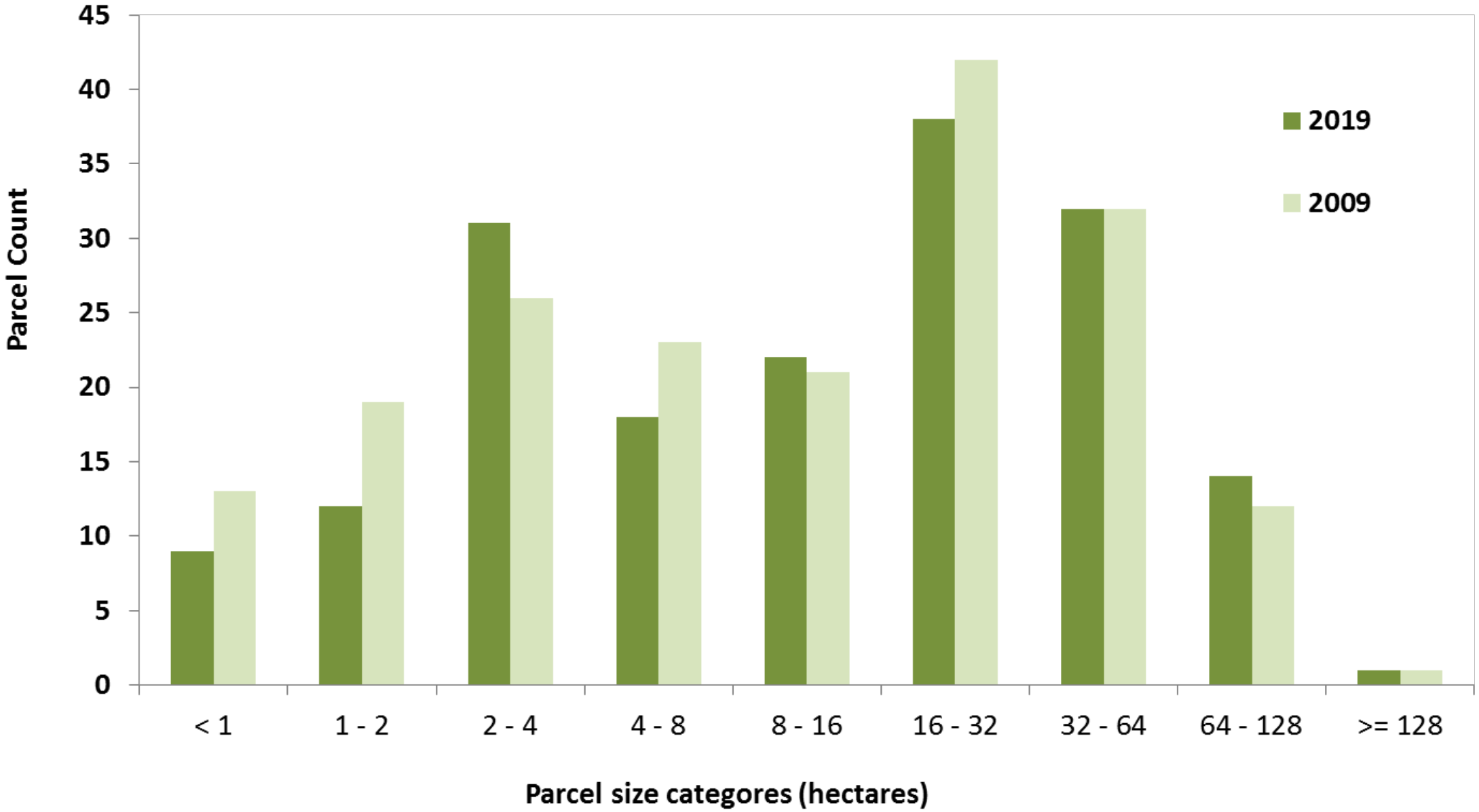


2009

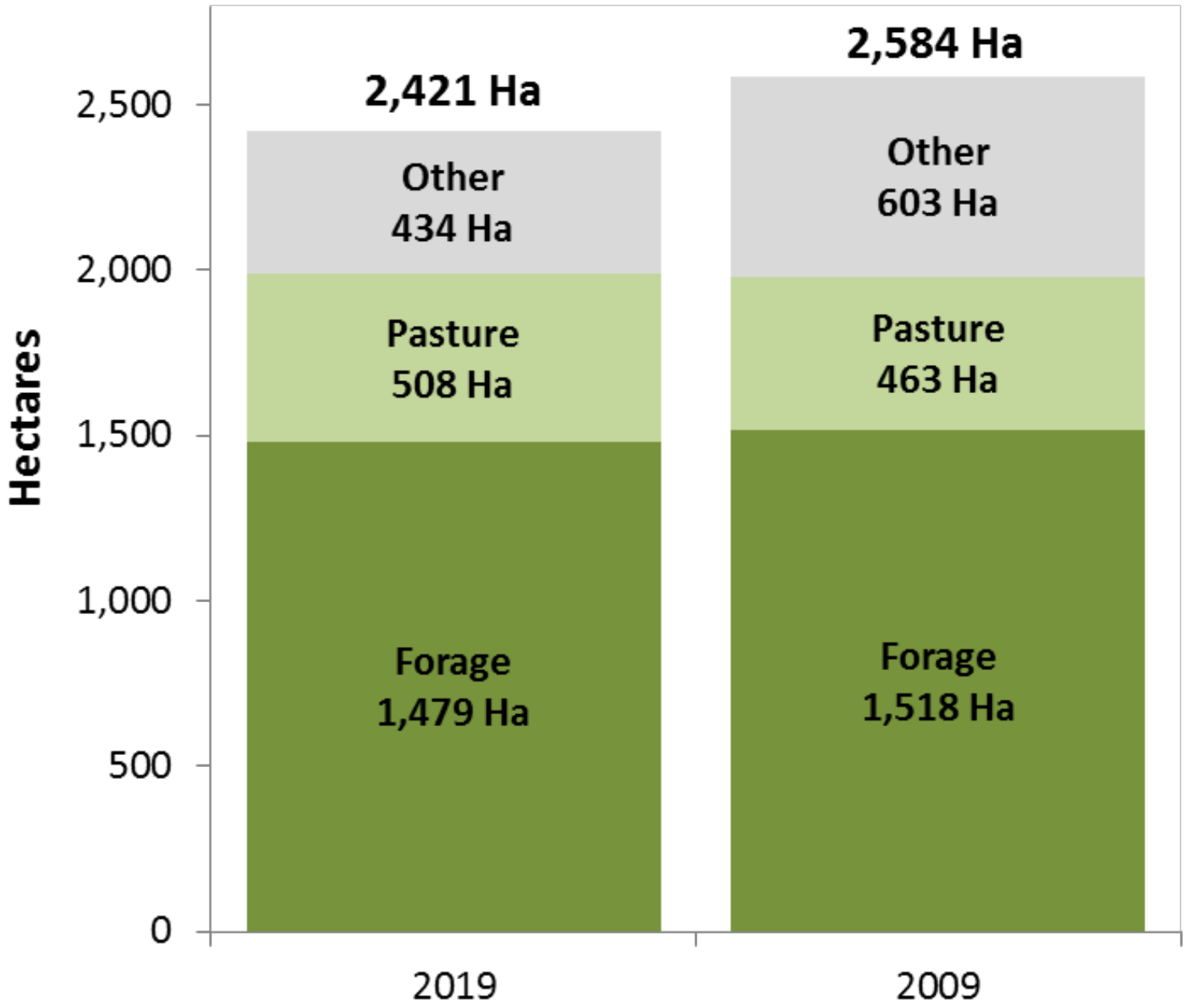
ALR – Private Parcels



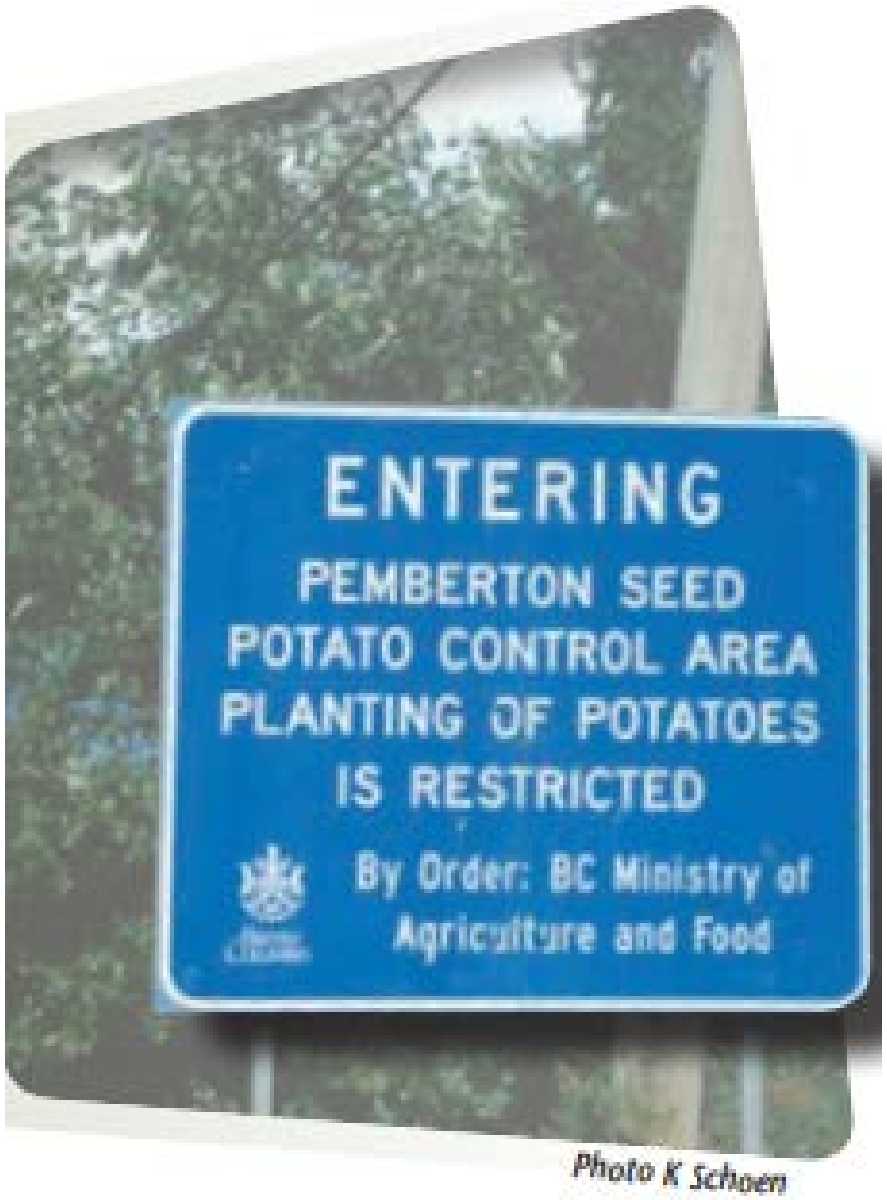
ALR – Farmed Private Parcels

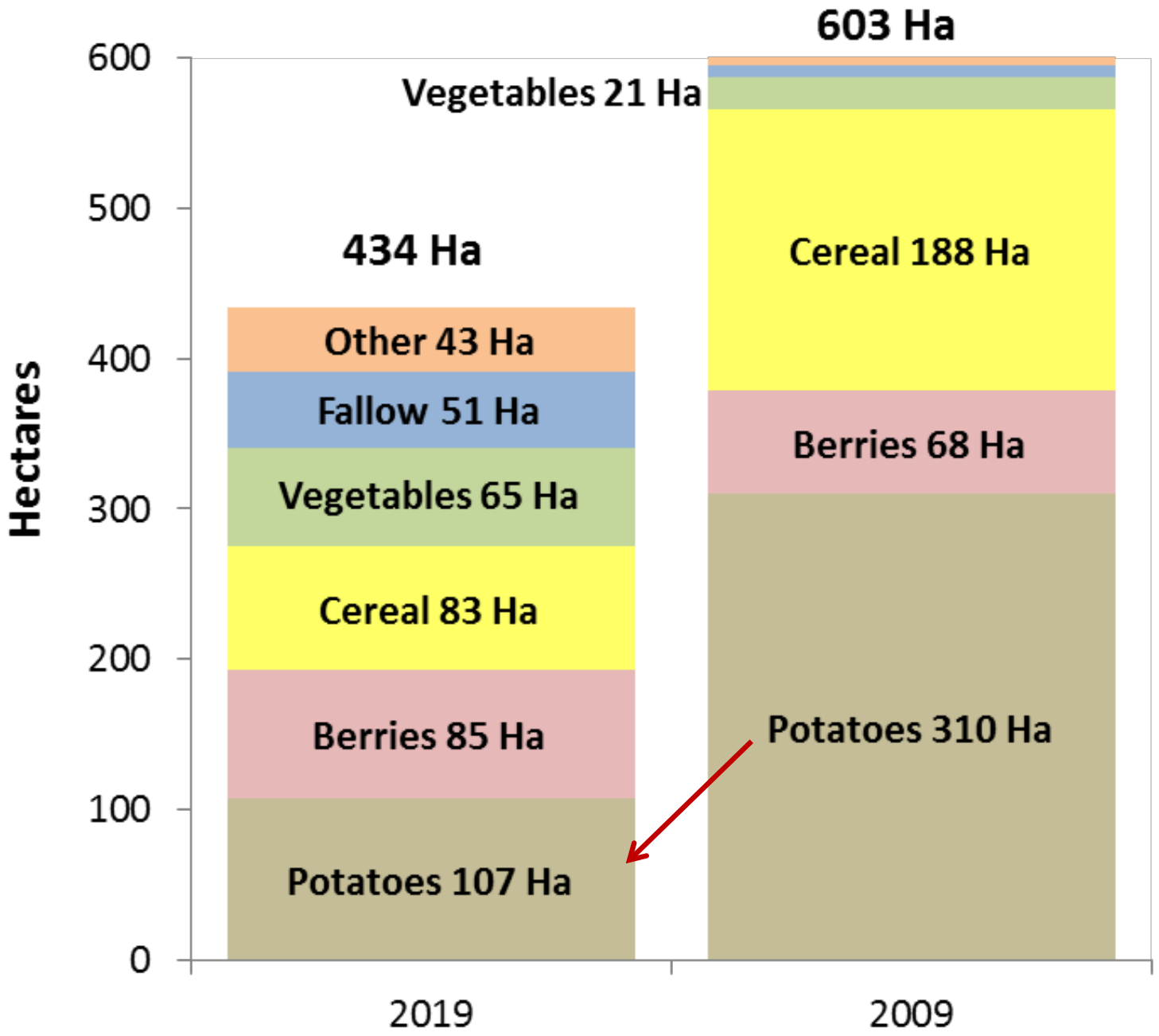


ALR – Cultivated Land



ALR – Cultivated Land





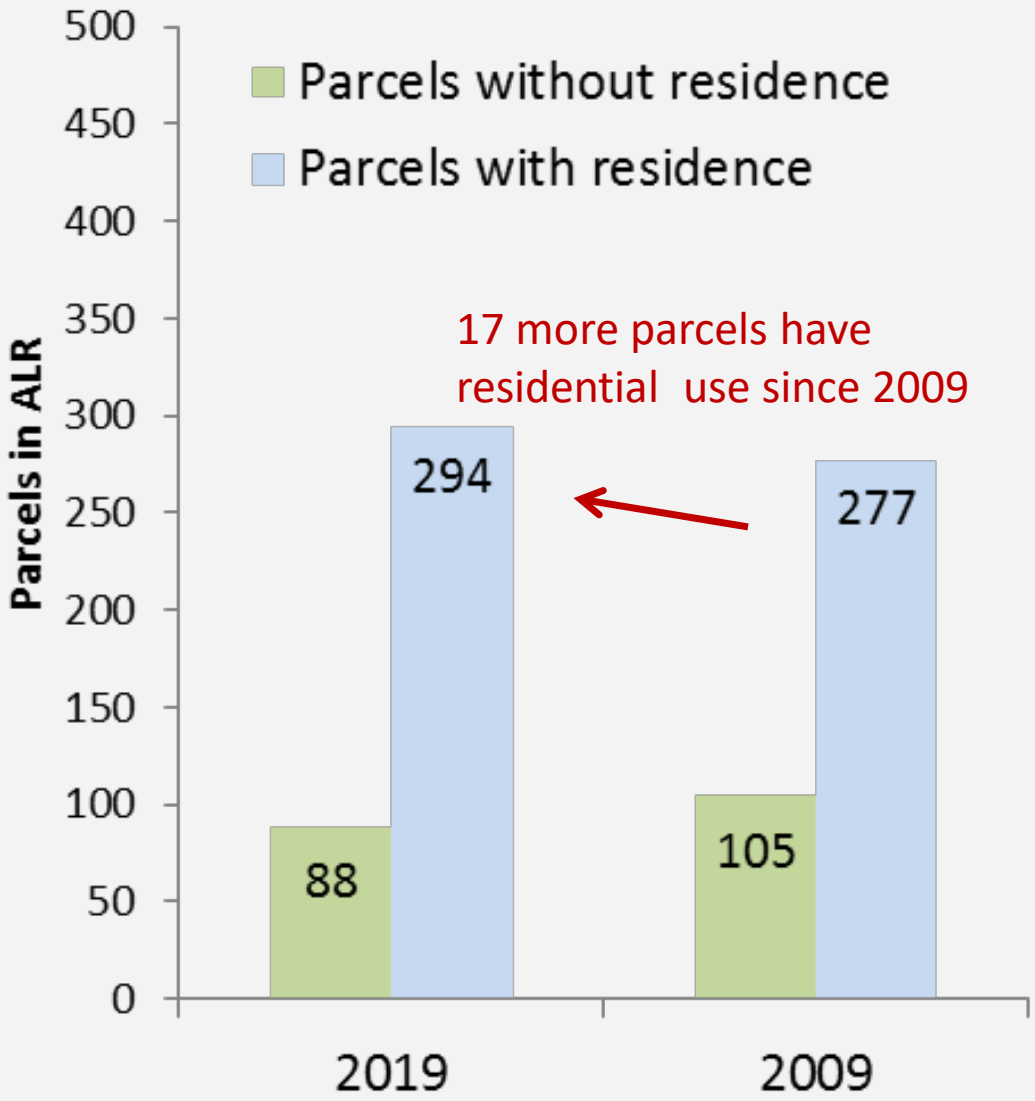
Livestock

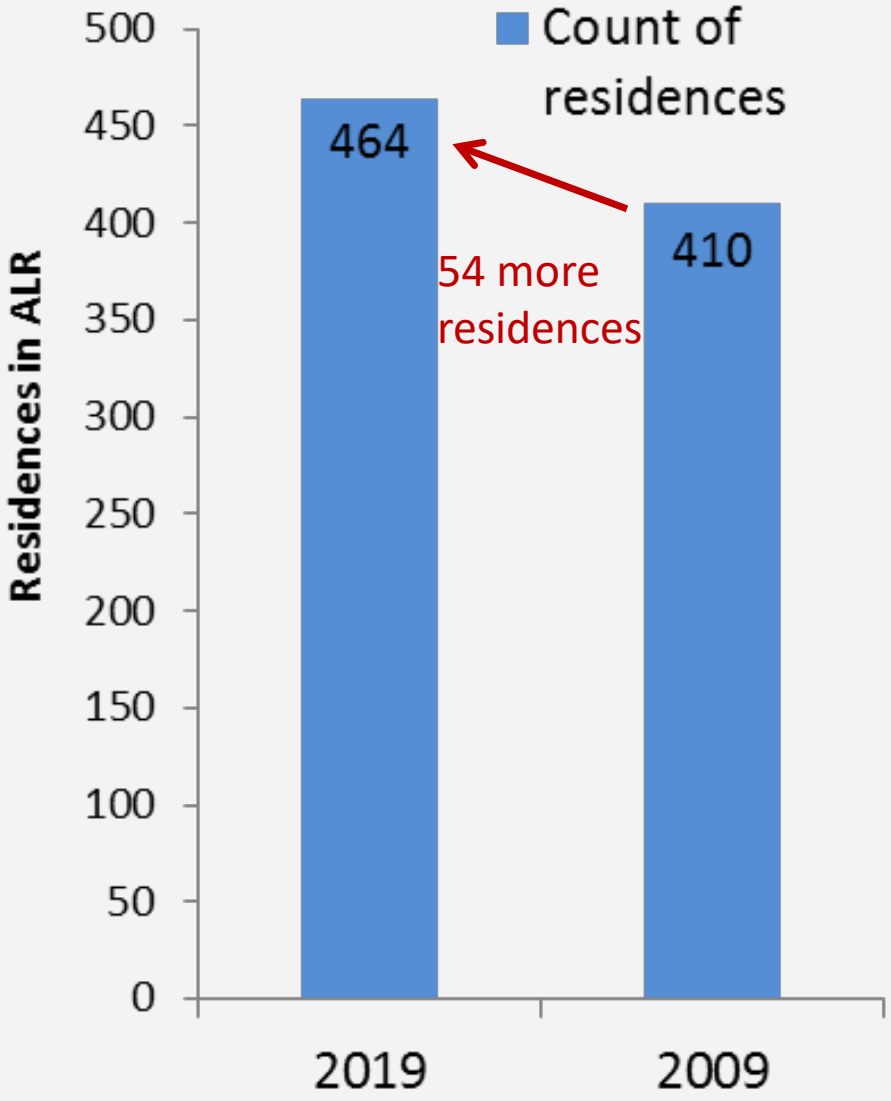
Livestock	Scale of Operation	2019		2009		% increase since 2009
		Parcels	Animals	Parcels	Animals	
Dairy Dry cow	Very Large	7	550	-	-	new
Beef	Large scale	9	1,100	2	250	162%
Beef	Medium scale*	27	530	5	250	
Beef	Small scale	18	150	25	180	
Equine	All scales	63	321	69	297	8%
Other	Hobby	56	-	45	-	24%
TOTAL		**180**	**2,651**	**146**	**977**	**171%**

Agricultural Value Added

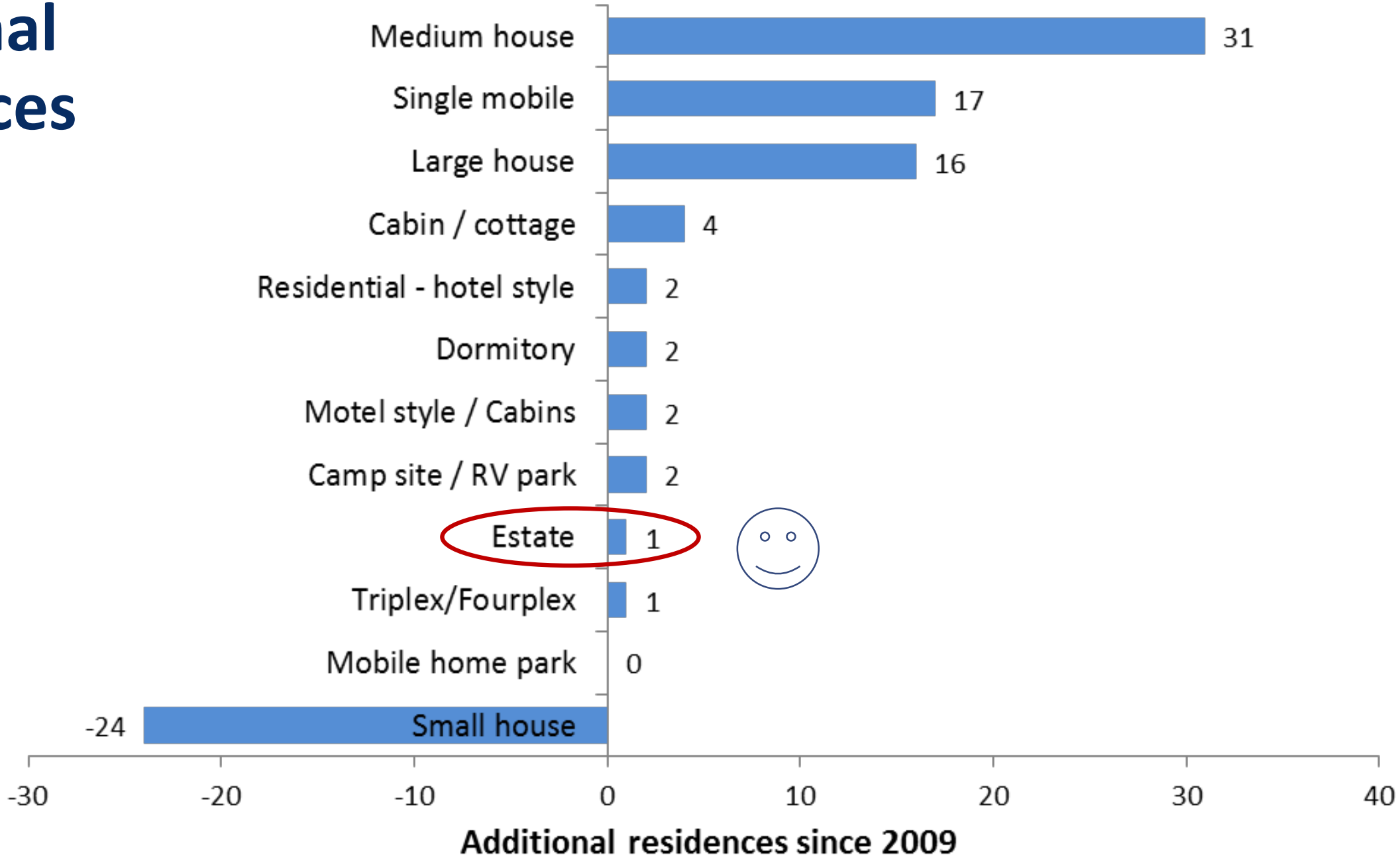
Helmer’s Organics
Kuurne Farms
Miller Farms or the Beer Farmers
Pemberton Valley Farms
Riverlands
Blue House Organics
IceCap Organics
Laughing Crow Organics
Myrtle
North Arm Farm
Plenty Wild
Adventures on Horseback
Bandit Farms
Blackwater Creek Orchard
Copper Cayuse Outfitters
Dreamcatcher Meadows
Hawthorne Ranch
Pemberton Meadows Inn
Zalamwillow Farms

Residential in ALR





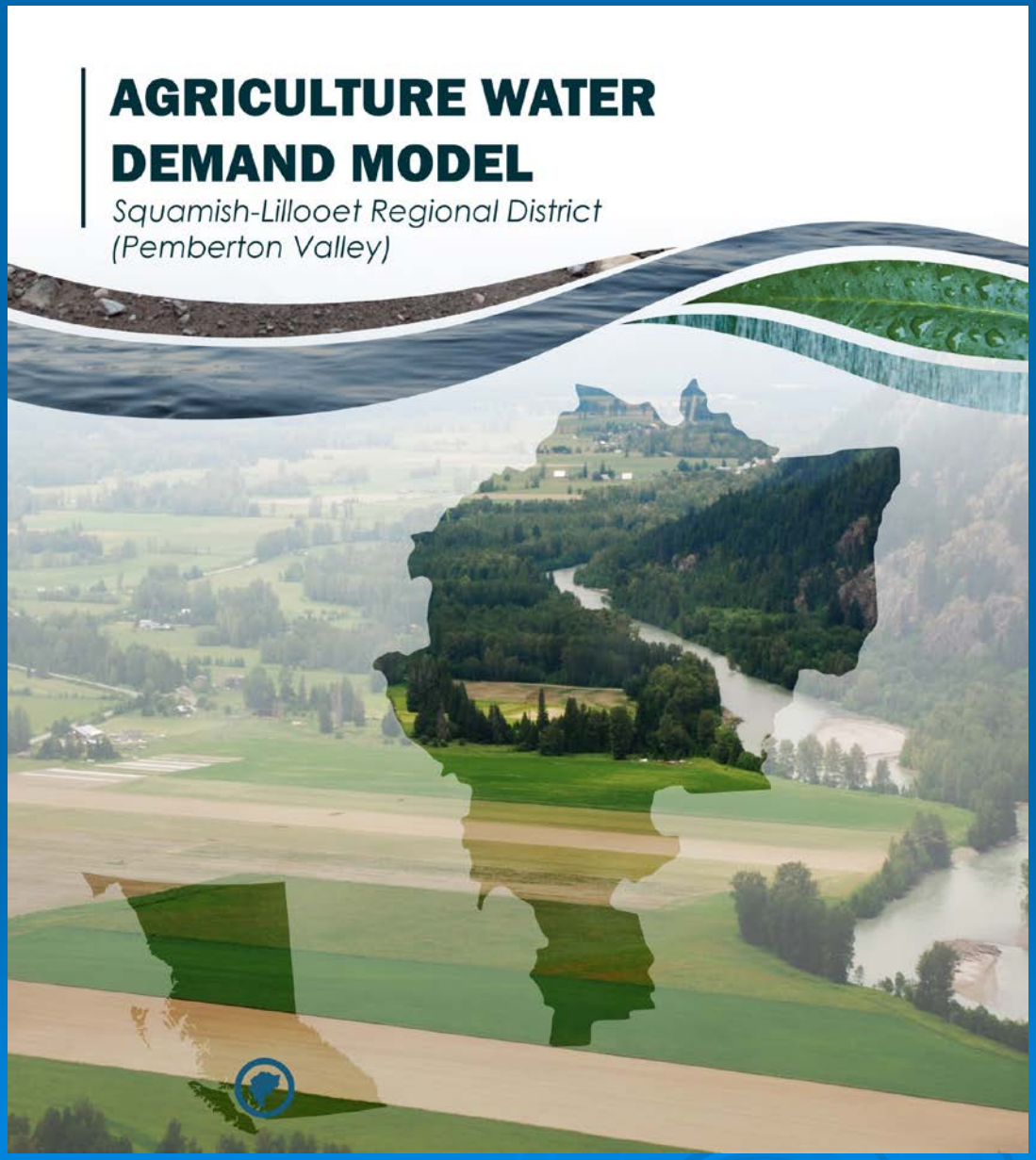
Additional Residences In ALR



- Very minor loss of land in agricultural use since 2009 (22 parcels), but much of this is still available for farming
- Decline in potatoes, 107 Ha in 2019 down from 310 Ha in 2009
- Still no intensive livestock production or supply-managed commodity – but saw a significant increase in pastured cattle
- Residential use has increased, with 17 parcels gaining residential use; 54 new residences in total

Thank you

QUESTIONS & COMMENTS



Stephanie Tam, P.Eng.
Water Management Engineer
BC Ministry of Agriculture

August 26, 2020

Overview
Agriculture Water Demand Model

- **Objective:** Reserve water for agriculture
  - "*How much water do you need?*"
- **Results:** Calculate current and future agriculture water requirements
  - Irrigation
  - Livestock
  - Frost protection
  - Flood Harvest

Food Self Reliance in BC

Food Group	BC Consumption Million Kg's	BC Production Million Kg's	% Self Reliance
Dairy	1,080	617	57%
Meat	467	298	64%
Vegetables (BC Grown)	764	331	43%
Fruit (grown in BC)	172	273	159%
Grain for Food	315	43	14%
Total – (Grown in BC)	2,798	1562	56%
Fruit (not able to grow in BC)	310		
Vegetables (not able to grow in BC)	1		
Sugar	136		
Total - BC	3,245	1562	48%

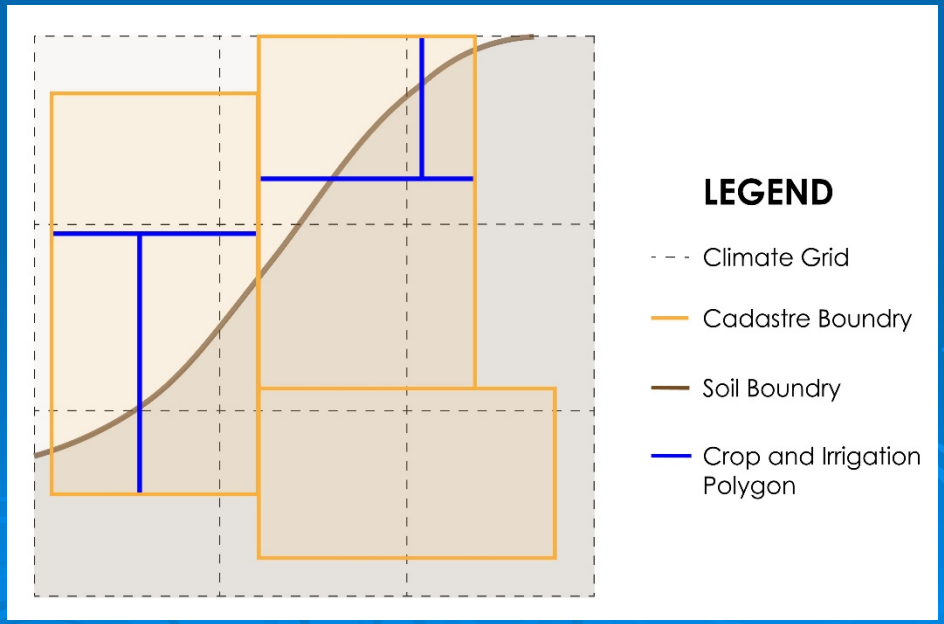
Climate Change

Changes in water supply and demand

- Summers will be drier
- Summers will be hotter requiring more water
- Less snow pack and more rainfall in winter – hydrology will change

Data Input

- Crop (ALUI)
- Irrigation System (ALUI)
- Soil (Ministry of Environment)
- Climate (historical1960 – 2010, future predictive to 2100)
- Algorithms to calculate water demands



Data Output (Results)

- Model calculates water demand by property.
- Model summarizes demand by crop, irrigation system, or soil.
- Reports can be generated for specific region, local government, electoral area.

Irrigation Demand with Climate Change - SLRD

Crop	Irrigated Area (ha)	Irrigation Demand (m^3)		
		Year 2003	Year 2053	% Increase
Forage	1,797	17,620,959	22,767,723	29%
Vegetable	193	1,113,905	1,507,155	35%
Cranberry	44	368,823	408,428	11%
Berry	35	127,890	195,523	53%
Other	29	216,383	281,246	30%
Total	2,098	19,447,960	25,160,075	29%

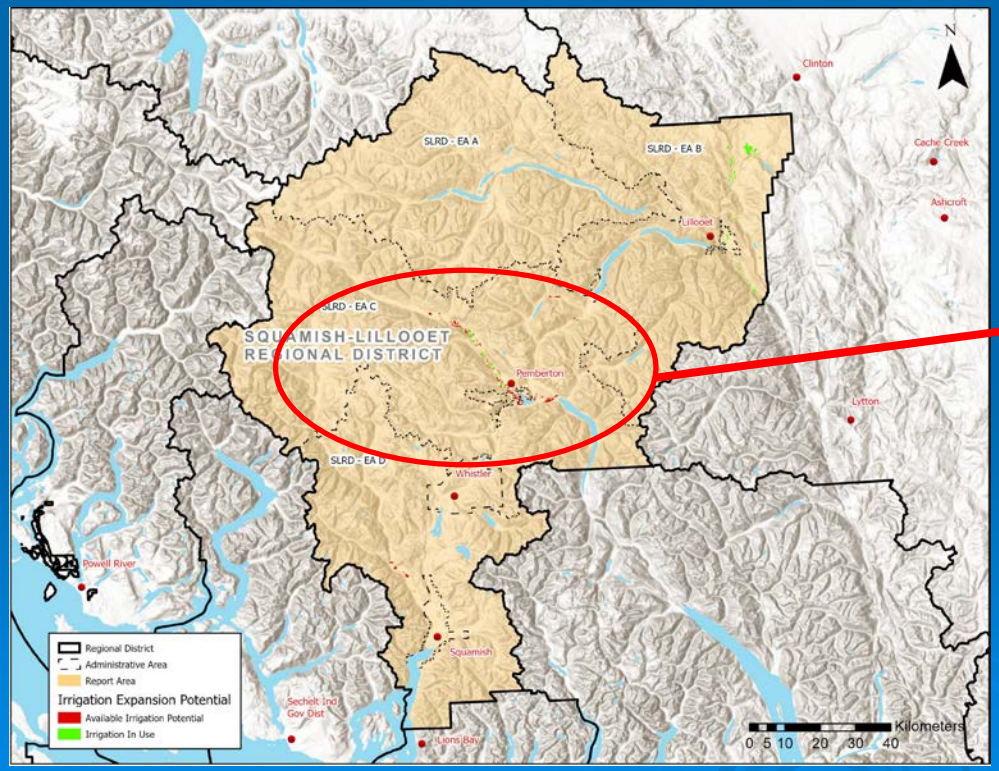
Irrigation Demand with Climate Change - Pemberton

Crop	Irrigated Area (ha)	Irrigation Demand (m^3)		
		Year 2003	Year 2053	% Increase
Forage	450	3,038,962	4,168,232	37%
Vegetable	175	1,011,452	1,381,075	37%
Cranberry	44	368,823	408,428	11%
Berry	35	127,113	194,093	53%
Other	12	94,028	124,603	33%
Total	716	4,640,378	6,276,431	35%

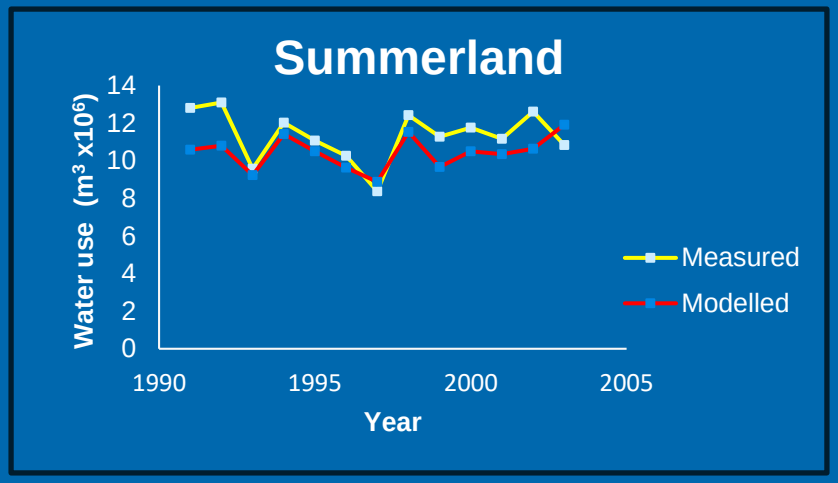
Future Expansion of Irrigated Area

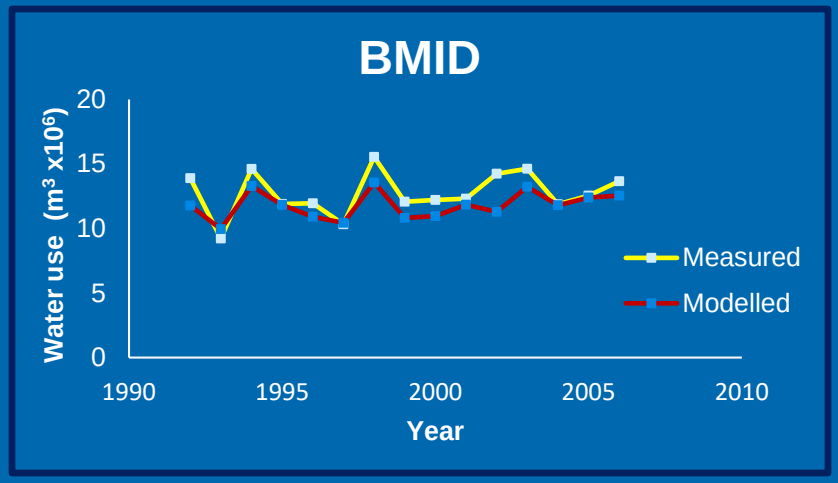
Current Irrigated Area = 2,098 ha (SLRD) and 716 ha (Pemberton only)

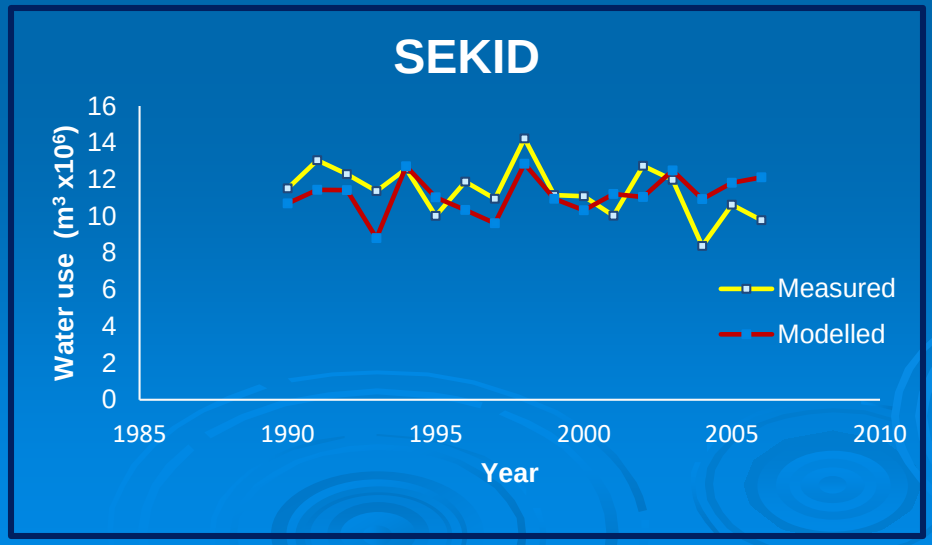
Future Irrigated Area = 2,526 ha (SLRD) and 2,094 ha (Pemberton only)



Result Comparison







Applications of Agriculture Water Demand Model

- Water budget analysis – drought, allocation
- Agriculture land use planning
- Agriculture food strategy
- Dedicated Agriculture Water – Water Sustainability Plan (WSP) under Water Sustainability Act (WSA)