Chilean Seed Industry

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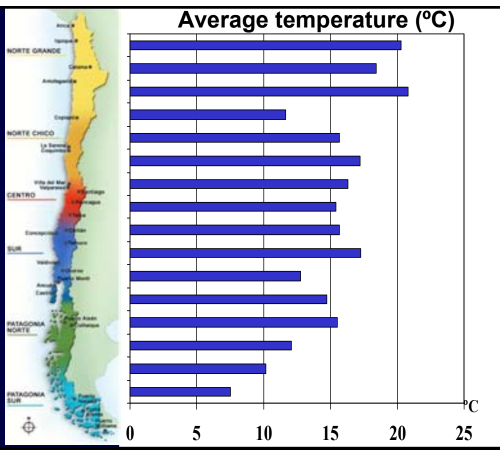
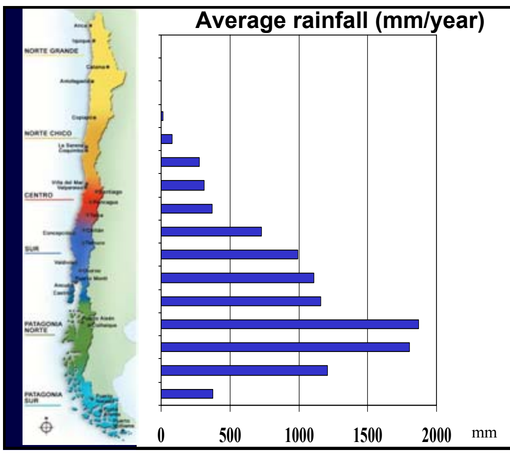
Location and borders





Three geographic and climatic zones:

North

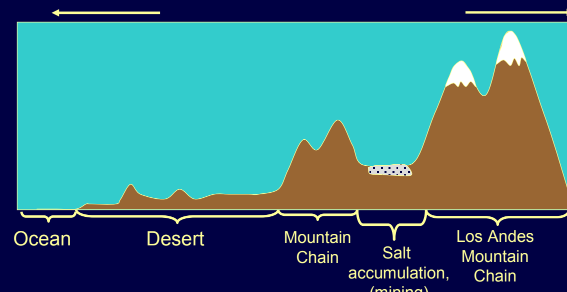
Central

South

North, transversal perspective:

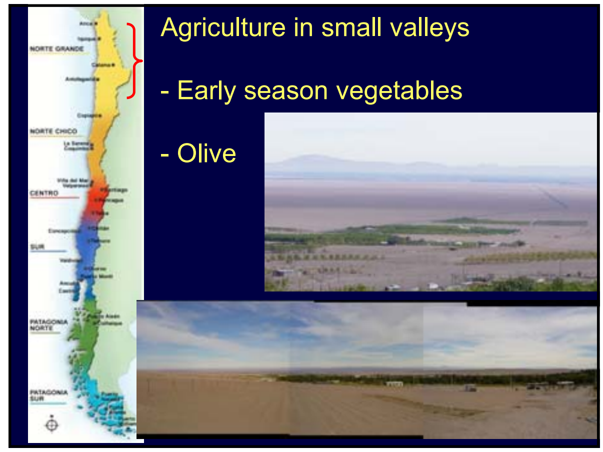
West

East (Bolivia or Argentina)



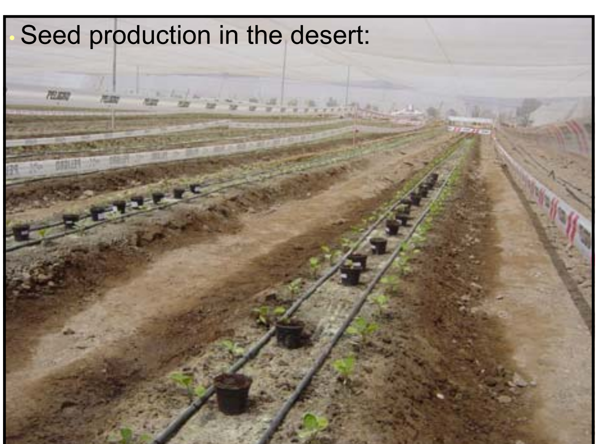
90 to 450 km

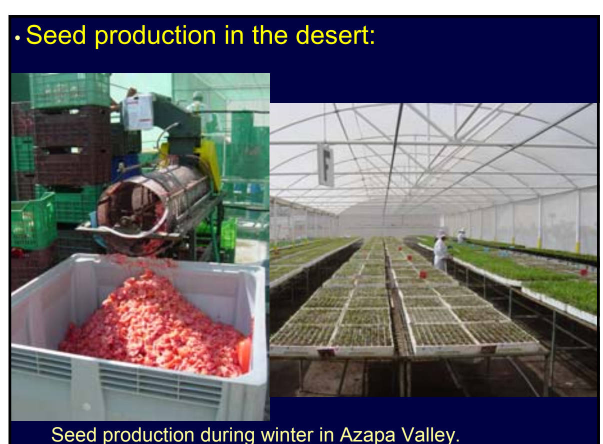

Atacama Desert


Agriculture in small valleys
- Early season vegetables
- Olive


Winter production of vegetables in LLuta and Azapa Valleys.


Seed production in the desert:

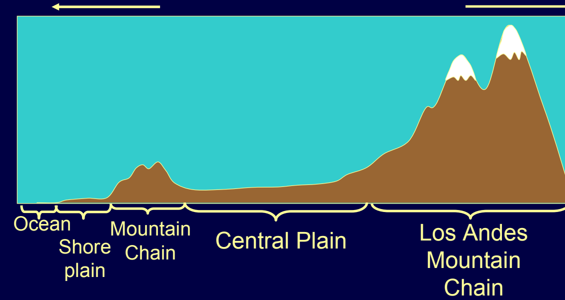

Seed production in the desert:


Seed production in the desert:
Seed production during winter in Azapa Valley.

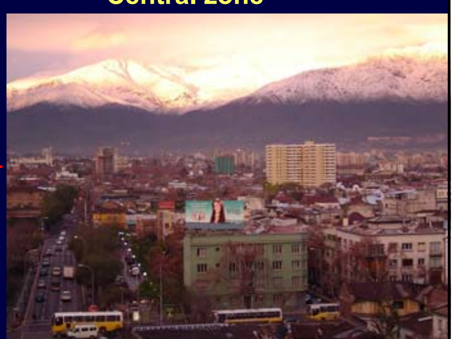
Agriculture in valleys

- **Early season Table Grape**
- **Pisco Grape**
- **Citrus**
- **Papaya (*Carica candamarcensis*)**
- **Early season vegetables**

Central zone, transversal perspective:



Central zone



Santiago

Central Region

Intensive Agriculture

-Grape (table & wine)
-Fruits
-Cereals (corn, wheat)
-Vegetables
-Flowers
-Seed Production

Irrigated area: 1,000,000 ha
22,800 km of irrigation channels

Central zone


Central zone

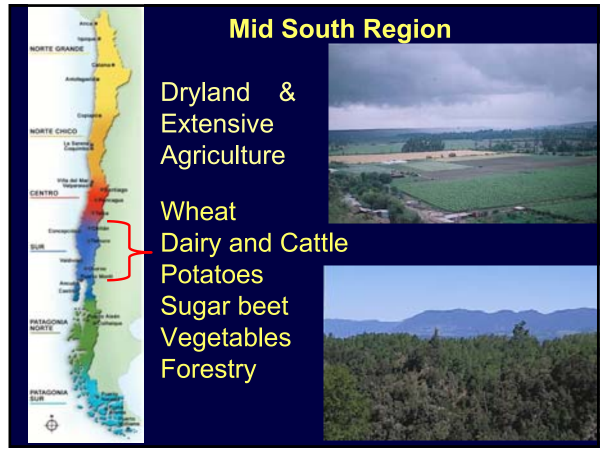

Central Zone

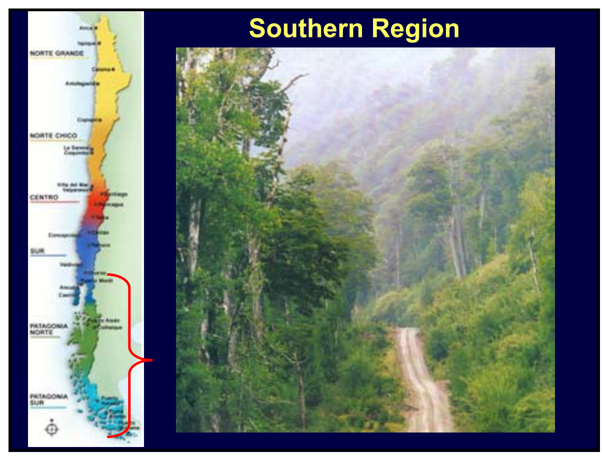

Central zone

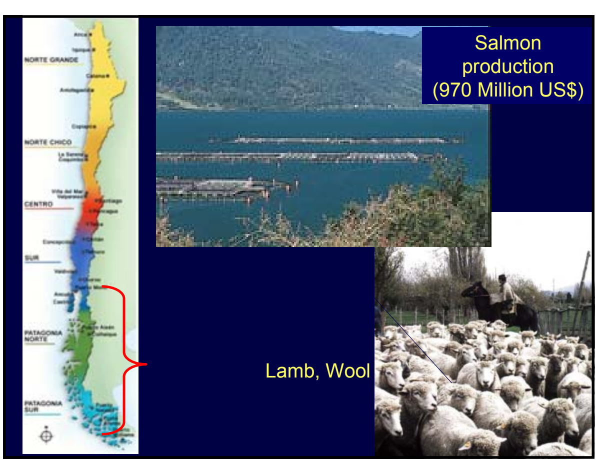

Central zone


Central zone


Central zone







Seed production

Seed produced in Chile can be grouped into two types:

- Seeds for the national market
- Seeds for export

National Market

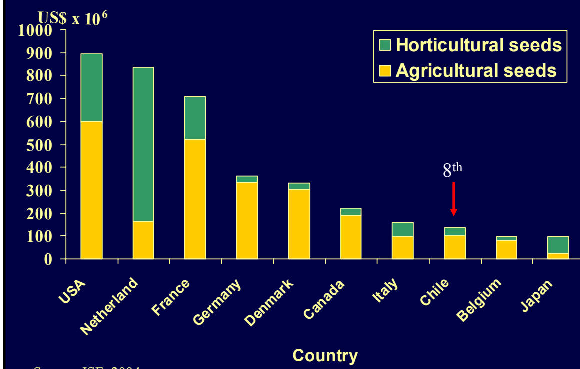
Estimated value (mill. US$) of the commercial markets for seed and planting material for countries

Country	US$ x 10^6	Country	US$ x 10^6
1. USA	5,700	11. Russian Fed.	500
2. China	4,500	12. Korea	400
3. Japan	2,500	13. Australia	400
4. France	1,930	14. Mexico	350
5. Brazil	**1,500**	15. Taiwan	300
6. Germany	1,000	16. Spain	300
7. India	1,000	17. Poland	260
8. Argentina	**930**	18. UK	257
9. Italy	780	19. Turkey	250
10. Canada	550	20. South Africa	250

→ **31. Chile** **120**

Source: ISF, 2005.

International Market



Source: ISF, 2004.

Number of Chilean companies exporting seed by crop.

Year	Maize	Sun-flower	Vegeta-bles	Melon/ water-melon	Tomato	Dry Bean	Clover	Alfalfa	Total compa-nies
1997	22	16	29	19	22	16	5	5	**73**
1998	26	22	28	18	19	16	3	3	**77**
1999	22	23	22	16	16	14	3	3	**70**
2000	21	19	21	18	17	13	3	3	**73**
2001	19	17	21	13	11	9	3	3	**73**
2002	19	19	29	15	13	11	4	4	**73**
2003	15	20	29	15	17	10	5	5	**76**
2004	20	19	29	17	15	7	4	4	**71**

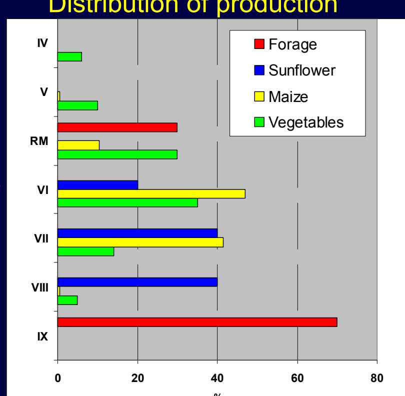
Source: Fundación Chile. "Caracterización de las exportaciones de la industria nacional de semillas, Informe preliminar"

Number of seed growers in Chile and area by crop, 1997.

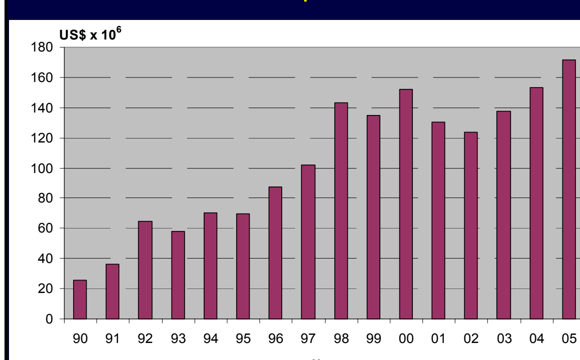
Crop	Number of growers	Area (ha)	Average area by grower (ha)
Maize	694	13,867	20.0
Forage	306	4,750	15.5
Vegetables	1,143	3,332	2.9
Sunflower	114	1,556	13.6
Bean	130	713	5.5
Others	679	5,562	8.2
Total	3,066	29,778	9.7

Source: INE, 1997.

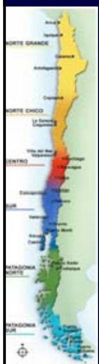
Distribution of production



Value of Chilean seed exports from 1990 to 2005.

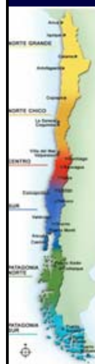


Chilean advantages for seed production



- Counter-season production in relation to the Northern Hemisphere
- Different agroclimatic zones along the country
- Well marked seasons during the year (absence of summer rains)
- Low incidence of phytosanitary problems
- Irrigation

Chilean advantages for seed production



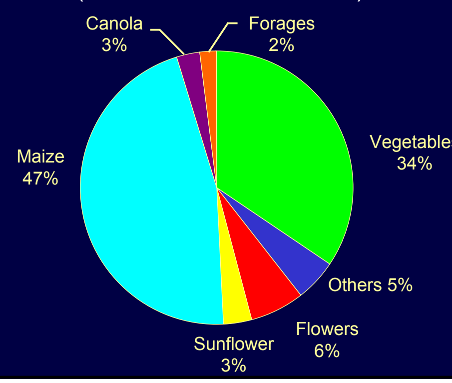
- Relatively low production costs
- Good technological level
- Appropriate infrastructure for export
- *Ad hoc* legislation supports the needs of the seed industry
- National Association of Seed Producers (ANPROS)

International Market

Main destination of Chilean seed exports during 2005

Country	US$	%
U.S.A.	94,786,004	55.14
France	19,738,717	11.48
Netherlands	17,891,822	10.41
Germany	8,744,696	5.09
Japan	6,811,194	3.96
Others	23,932,569	13.92
Total	**171,905,002**	**100**

Crops exported, 2005
(total US$ 171.91 millions)



Maize:

Export value and principal importers of maize seed

Country	2002		2003		2004	
	US$	%	US$	%	US$	%
USA	50,937,798	*77.9*	55,995,362	*82.5*	47,226,758	*62.6*
France	8,857,034	*13.6*	6,669,728	*9.8*	17,683,610	*23.4*
Germany	2,007,148	*3.1*	1,389,769	*2.1*	5,615,455	*7.4*
Netherlands	2,898,070	*4.4*	2,687,395	*4.0*	2,655,613	*3.5*
Belgium	0	*0.0*	0	*0.0*	649,290	*0.9*
Japan	353,852	*0.5*	425,648	*0.6*	575,593	*0.8*
Others	310,448	*0.5*	669,654	*1.0*	1,046,963	*1.4*
Total	**65,364,350**	***100***	**67,837,520**	***100***	**75,453,282**	***100***

Maize:

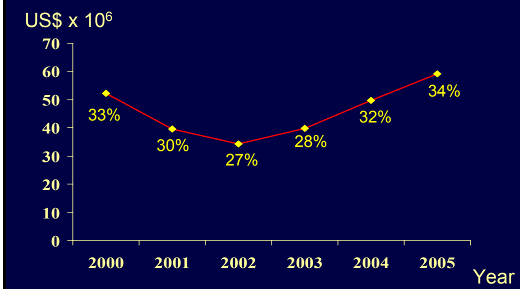
- **There were 20 companies that produced maize seed in 2004.**
- **Main companies:**

Pionner: 32%

Others:

Semameris	(11%)
ANASAC	(13%)
Massai	(10%)
Green Seed	(10%)
Limagrin	(9%)
CIS	(4%)

Vegetables:



Vegetable seed export value from 2000 to 2005 and percentage of participation in relation to the total seed export value of each year.

Vegetables:

Vegetable seed export value by crop from 2003 to 2005.

Species	2003		2004		2005	
	US$ x10³	%	US$ x10³	%	US$ x10³	%
Pepper	7,307	*18*	13,502	*27*	14,603	*25*
Cauliflower	3,206	*8*	2,352	*5*	6,201	*10*
Broccoli	2,248	*6*	2,573	*5*	2,579	*4*
Cucumber	4,624	*12*	7,447	*15*	5,921	*10*
Onion	2,485	*6*	1,666	*3*	2,863	*5*
Lettuce	1,335	*3*	1,730	*3*	2,279	*4*
Pumpkin	2,397	*6*	2,892	*6*	3,344	*6*
Melon	2,910	*7*	3,576	*7*	4,623	*8*
Watermelon	2,453	*6*	3,794	*8*	5,532	*9*
Tomato	5,577	*14*	4,977	*10*	3,992	*7*
Others	5,222	*13*	5,242	*11*	7,155	*12*
TOTAL	**39,764**	***100***	**49,751**	***100***	**59,091**	***100***

Vegetables:

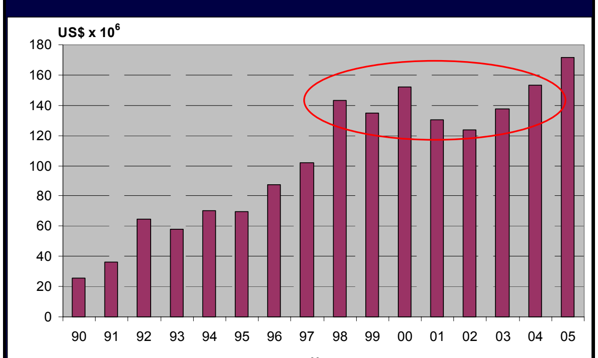
Average value of vegetable seed exports by crop from 2003 to 2005.

Species	2003	2004	2005
	US$/ kg	US$/ kg	US$/ kg
Pepper	128.5	177.1	154.6
Cauliflower	70.7	52.5	88.2
Broccoli	25.1	40.3	45.7
Cucumber	22.0	23.4	24.9
Onion	25.1	40.3	45.7
Lettuce	7.2	7.9	8.4
Pumpkin	18.9	18.9	21.3
Melon	129.8	126.2	87.4
Watermelon	124.3	170.1	223.2
Tomato	390.9	308.6	301.6

Vegetables:

- **29 companies produced vegetable seeds in Chile in 2004.**
- **Main companies:**
  - Seminis
  - Others:
    - Pinto y Gajardo
    - Marambio
    - Sakata Seed Chile
    - ANASAC
    - Limagrin
    - Takii
    - Sunseeds

Value of Chilean seed exports from 1990 to 2005.



Challenges of the industry

- To keep and improve the quality of seeds produced
- To increase the efficiency of production
- To encourage a higher interaction of different agents of the industry