

REPORT

ISLAMIC REPUBLIC OF IRAN

Fourth session of the Technical Committee

Of

UNAPCAEM

10 - 11 Feb 2009 Chiang Rai, Thailand

content

- ◆ General
- ◆ Cultivated Area
- ◆ Organization
- ◆ Training
- ◆ Post harvest Industries
- ◆ Local manufactures
- ◆ Information dissemination
- ◆ Projects relevant to sustainable agriculture

General

- ◆ Approximately 53.7% of the country generally classified as a pasture, 20 % desert and semi-arid , 8.75 % forest and the rest of them are agricultural , rural ,urban area .
- ◆ The latest statistic in 2005 revealed that Iranian population was 68 millions of which 22.8 millions lived in rural area.
- ◆ The amount of rain fall is between the 50 to 2000 millimeters and the mean high of the country is 1200 meters over the sea level.

Summary of objectives and programmes

- **Agricultural Infrastructure & Rural Development Affairs**
- ◆ **1- To develop mechanization regarding climate and cultural features of different regions and provide necessary supportive and technical services.**
- ◆ **2- To plan and take necessary actions to protect and improve soil and arrange for better utilization thereof.**
- ◆ **3- To arrange for promotion of efficiency of irrigation in farms and orchards.**

- ◆ **4- To plan transfer of water of network 3 and 4 and traditional canals and qanats, distribution and consumption of agricultural water and take necessary actions in order to construct and maintain related installations within the scope of current rules and regulations.**
- ◆ **5- To develop and support small industries of agriculture sector and rural industries within the scope of state industrial policies.**

Supportive Measures

- ◆ **1-To support promotion of investment in agriculture sector and utilize credit facilities of agricultural Bank and other bank resources, create funds to support development of agriculture sector and complementary industries in cooperation with producers, and to provide facilities necessary for providing credits required by producers of agriculture sectors.**
- ◆ **2- To enforce supportive and insurance policies and methods in order to support producers, products and installations of agriculture sector and pay damages to damaged producers based on adopted policies.**

- ◆ **3- To plan and take adopt supportive and encouraging policies in order to develop and upgrade technology of agricultural machinery and equipment within the scope of approved policies.**
- ◆ **4- To provide facilities and coordinate promotion of export of products of agriculture sector and rural industries within the scope of state commercial policies and programs .**

Cultivated Area

- ◆ During the year 2005-2006 among the total of 15.65 millions hectares of land of I.R. of Iran about 12.96 millions hectares was allocated to annual and perennial crops from which 2.6 millions hectares were under the cultivation of orchard.
- ◆ Next table shows area, the amount of production per unit area, yield of some major crops either in irrigated lands and dry land.

Cultivated Area (ha)			Production (ton)			Yield (kg)		
Crop	Irrig.	Rainfed	Total	Irrig.	Rainfed	Total	Irrig.	Rainfed
Wheat	2706995.6	4171923	6878918.6	10137769.86	4525975.46	14663745.32	3745.03	1084.87
Barley	624491.2	942963.2	1567454.4	1972399.14	983632.79	2956031.93	3158.41	1043.13
Rice	630561.9	0	630561.9	2612174.34	0	2612174.34	4142.61	0
Maize	291763	84.5	291847.5	2165878.92	251.21	2166130.13	7423.42	2972.91
Chickpea	13743	588814	602557	16159.25	308626.85	324786.1	1175.82	524.15
Beans	92980.8	4328.9	97309.7	202377.26	5908.45	208285.71	2176.55	1364.88
Lentil	13377.5	195689.5	209067	16663.13	84120.95	100784.08	1245.61	429.87
Other Pulses	26405.3	5473.5	31878.8	39294.49	4707.62	44002.11	1488.13	860.07
Cotton	113345	3215	116560	279337.56	4335.78	283673.34	2464.49	1348.61

Cultivated Area (ha)			Production (ton)			Yield (kg)		
Crop	Irrig.	Rainfed	Total	Irrig.	Rainfed	Total	Irrig.	Rainfed
Tobacco	6944.6	4929	11873.6	11691.37	3787.82	15479.19	1683.52	768.48
Sugar beet	185887.8	0	185887.8	6709112.47	0	6709112.47	36092.27	0
Cane	66549	29	66578	4958866.53	524.41	4959390.94	74514.52	18083.21
Soybean	61100	20674.5	81774.5	149663.65	35303.63	184967.28	2449.49	1707.59
Rapeseed	74010.2	87034.8	161045	149925.12	165164.66	315089.78	2025.74	1897.69
Other Oilseeds	65831.7	22662	88493.7	88867.31	26118.44	114985.75	1349.92	1152.52
Potato	159874.9	3968.6	163843.5	4188207	30314.64	4218521.64	26196.78	7638.62
Onion	55366.9	3880.4	59247.3	1993028.28	45334.93	2038363.21	35996.75	11683.06
Tomato	146836.9	624.9	147461.8	5054829.9	9741.34	5064571.24	34424.79	15588.65

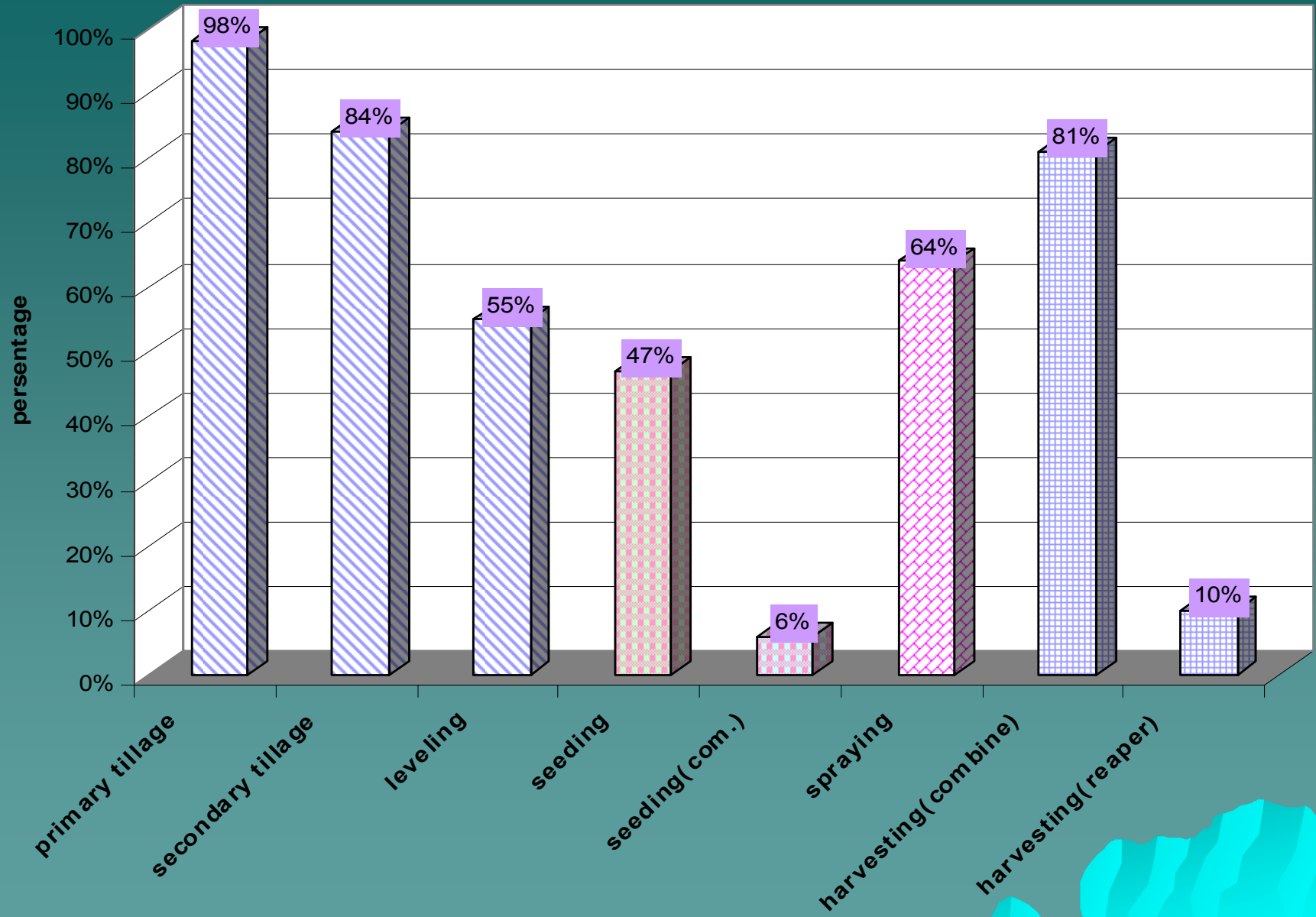
Cultivated Area (ha)			Production (ton)			Yield (kg)		
Crop	Irrig.	Rainfed	Total	Irrig.	Rainfed	Total	Irrig.	Rainfed
Other Vegetables	93843	18499.1	112342.1	2242823.71	225541.18	2468364.89	23899.74	12192.01
Melon	75898.6	2299	78197.6	1356452.18	10897.56	1367349.74	17871.9	4740.13
Watermelon	95717.7	23378.5	119096.2	2719320.29	147003.26	2866323.55	28409.8	6287.97
Cucumber	81562.2	787.9	82350.1	1933975.3	4515.82	1938491.12	23711.66	5731.46
Other Ground Crops	39321.2	2578	41899.2	643139.49	9393.78	652533.27	16356.05	3643.82
Alfalfa	583263.4	55207.5	638470.9	5063195.28	110166.19	5173361.47	8680.8	1995.49
Clover	54005.5	17696	71701.5	630268.88	462301.42	1092570.3	11670.46	26124.63
Other Forage Plants	265298.2	48193	313491.2	8450753.77	97218.2	8547971.97	31853.79	2017.27
Other crops	82827	28429	111256	172228.28	5422.08	177650.36	2079.37	190.72

Status of crop production

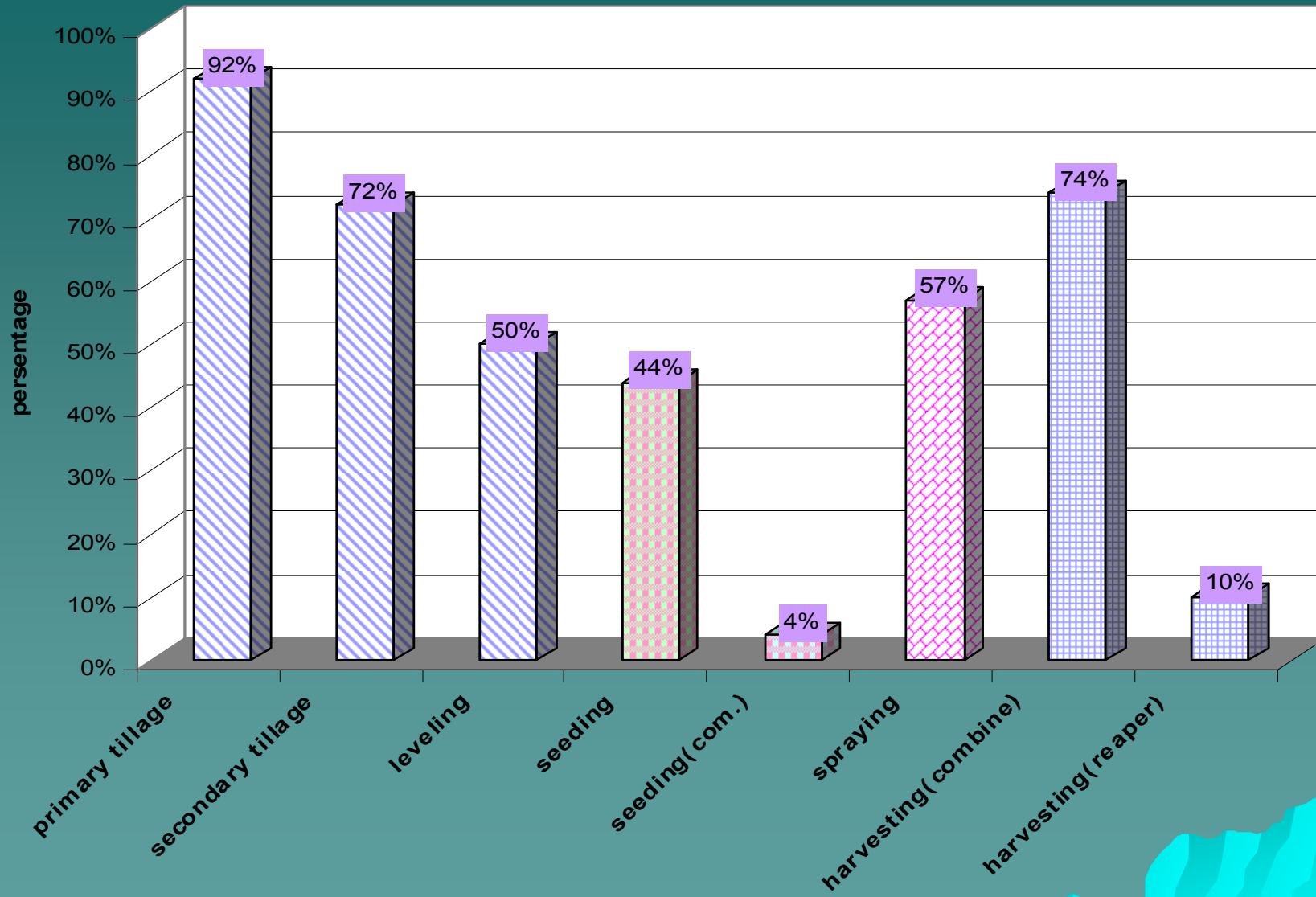
Crop Mechanization

- ◆ **wheat** is of high priority with a total planted area of 6.87 million ha, of which 4.17 million ha is rain fed and 2.70 million ha is irrigated.
- ◆ The second most important crop in terms of area is **barley** with an area of 1.56 million ha, of which 0.94 million ha is rain fed and 0.62 million ha is irrigated.

Wheat Mechanization(irrig.)



Barly Mechanization(irrig.)



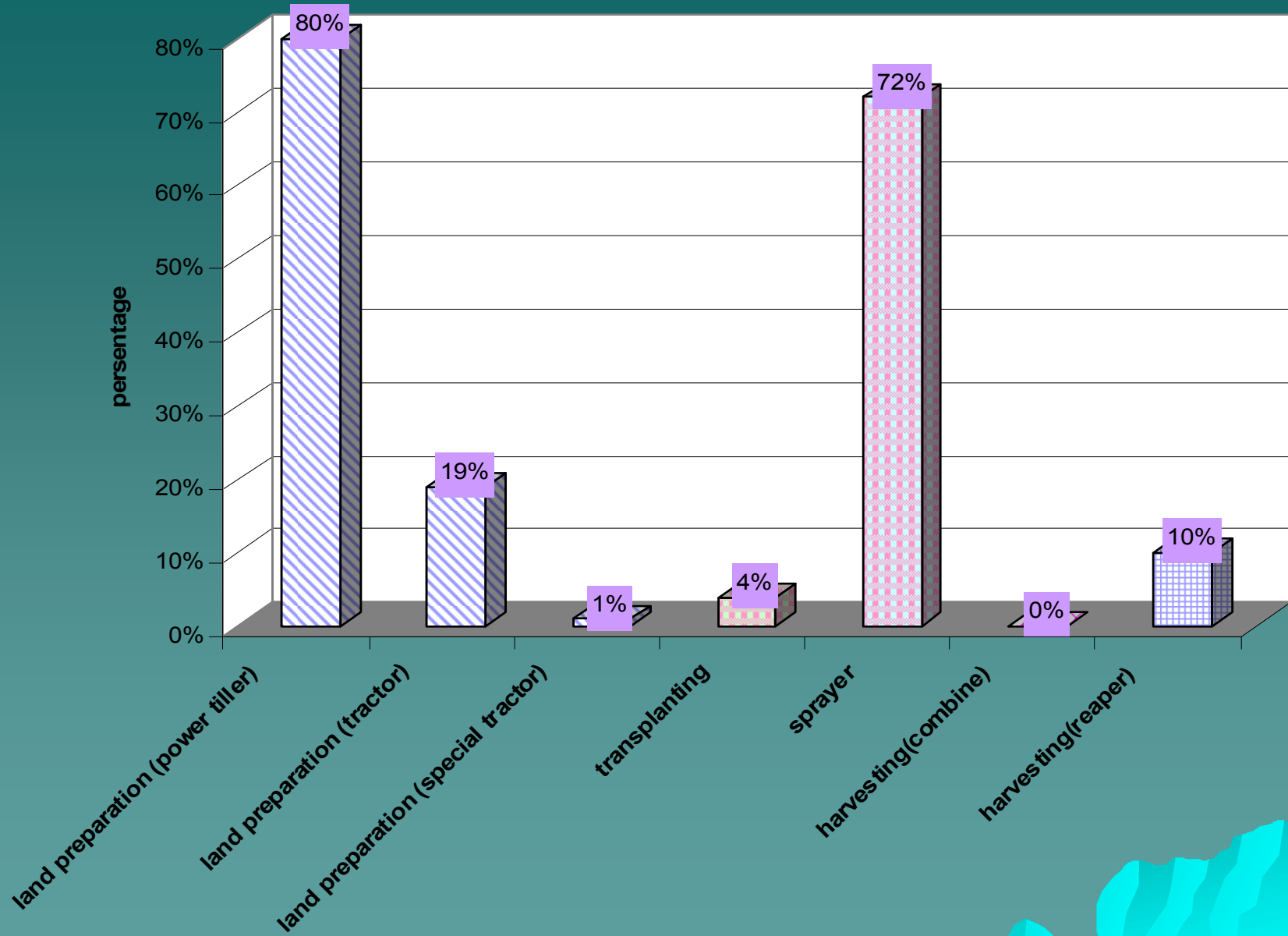
Rice Mechanization

- ◆ Rice is often double crop and this results in limited land preparation and seeding periods whilst labore costs can be particularly high for transplanting and harvesting.

Initially rice mechanization is considered a high priority for MoJA. However the MoJA and cooperative bodies had been extremely active in recent years in the rice mechanization field. With respect to land preparation a number of light weight tractors had been imported from leading manufacturers in Asia for comparative field evaluation.

Various walking type and ride-on type rice transplanters had also been procured as had four types of specialist rice combine harvester, both full feed and head feed type (Claas, Daedong, Kukje and Yanmar).

Paddy Mechanization



Chickpea Mechanization

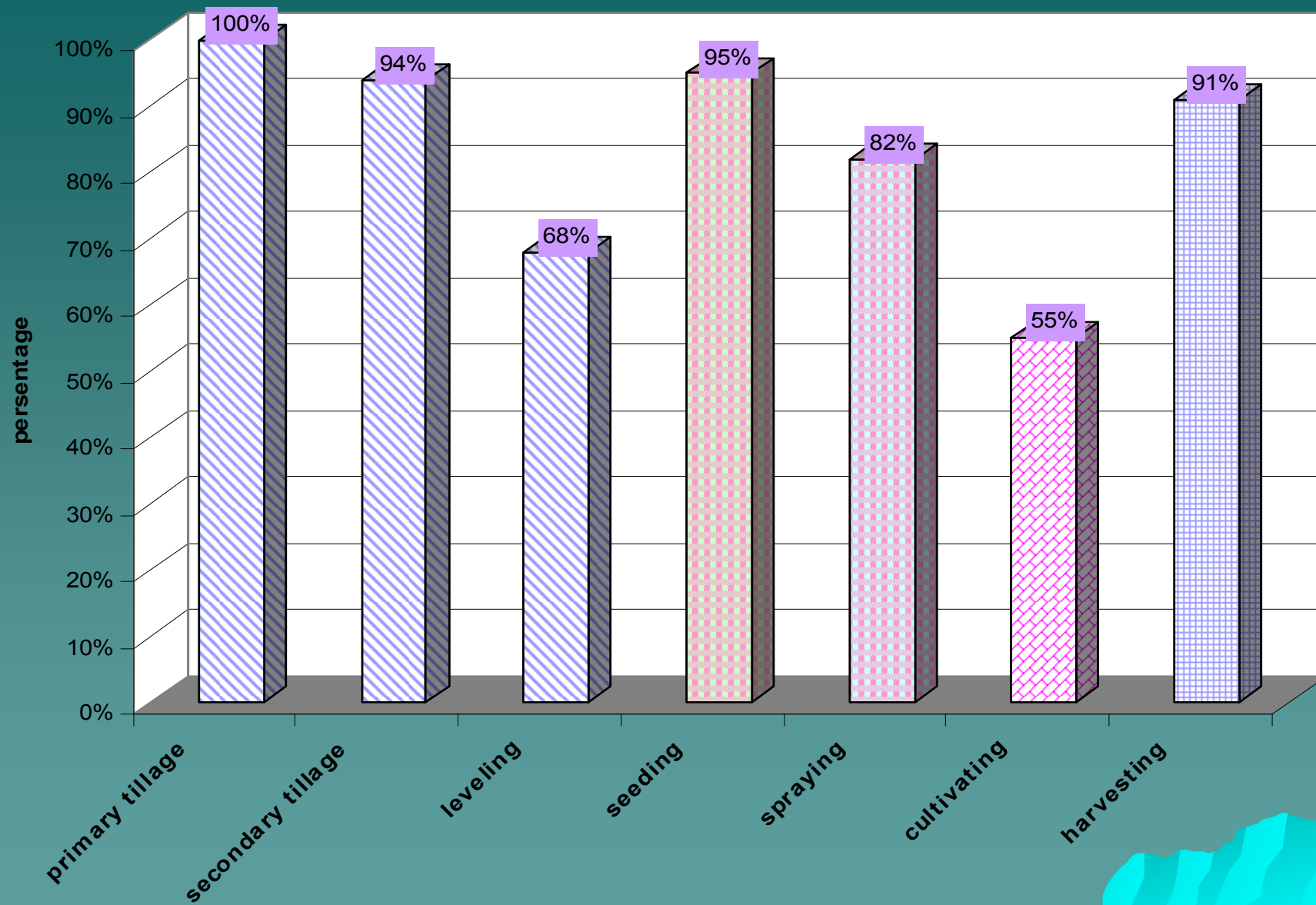
- ◆ Kermanshah province is the leading producer of chickpea in Iran ,the vast majority of which is dependent of rainfall.
- ◆ Chickpeas are often grown in rotation with dryland wheat and barley, and the retention of soil moisture is therefore extremely important.
- ◆ Harvesting has also been identified as a major problem for the farmer because of high hand harvesting costs and because the lower pods are located close to the ground making mechanized harvesting difficult .

- ◆ **The research institute of MOJA in Kermanshah have recently developed a purpose built chickpea header for the JD 955 combine harvester.**

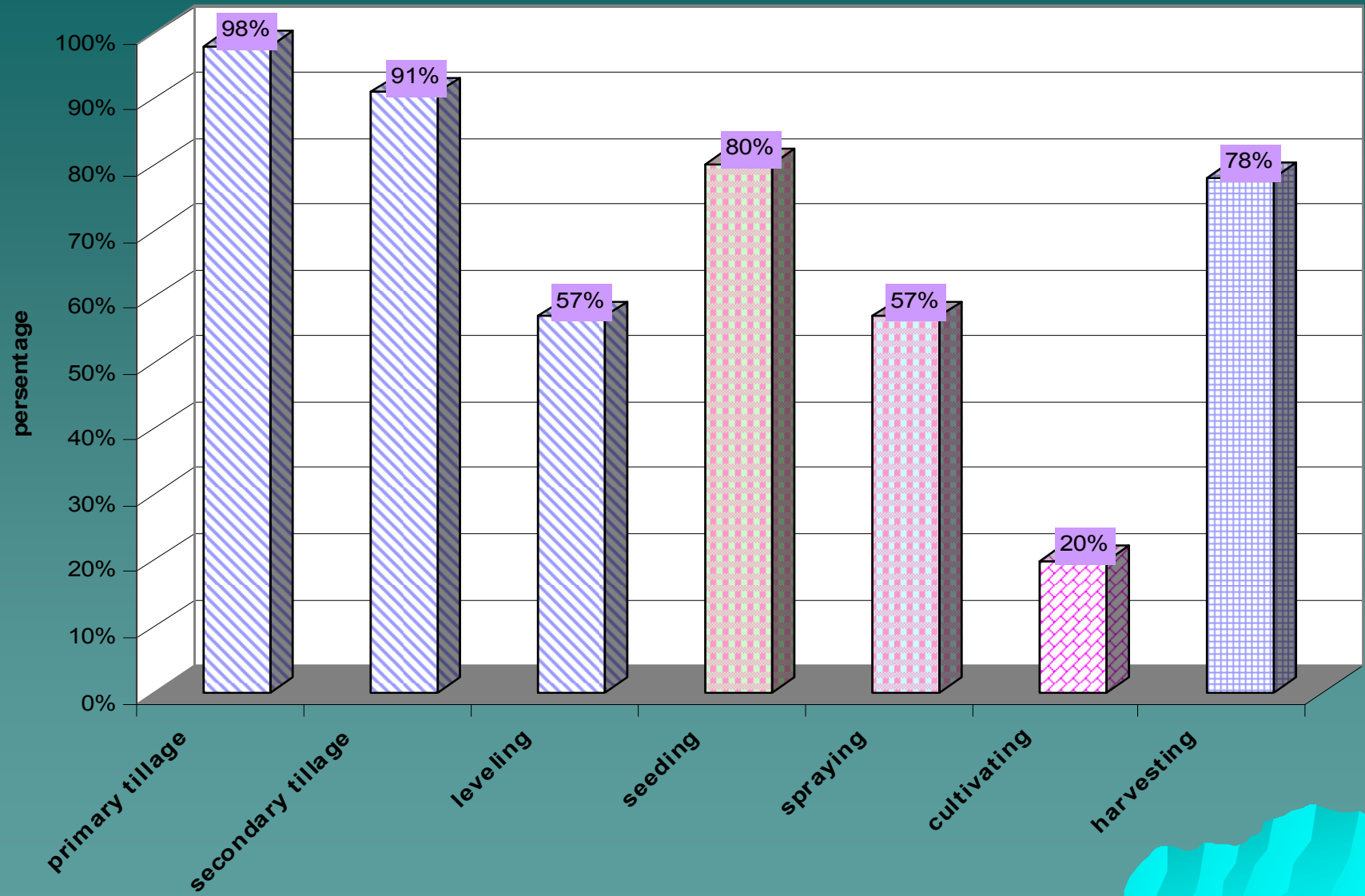
Maize, Soya Bean, Rapeseed, Alfalfa

- ◆ The maize mechanization in Iran is very well developed whether it be for grain or forage production. Precision planters, maize headers and self-propelled forage harvesters are widely employed .
- ◆ Soya bean production technology is well known and the appropriate machinery is available in Iran for the complete mechanization of the crop.
- ◆ Rapeseed and alfalfa are similarly fully mechanized .

Maize Mechanization



Oil seed Mechanization



Tea Mechanization

- ◆ The total area of tea production in Iran is rather limited at 34,000 ha.
- ◆ Approximately 70 percent of the crop is grown on sloping land and this presents particular difficulties for mechanization whilst the economics of tea production are currently marginal with a consumer preference for higher quality imported tea. An improvement in crop yield in the lowlands could be achieved by the expansion of **sprinkler irrigation** and consideration could also be given to the local manufacture of **engine driven tea pruners and harvesters** to assist in the reduction of laborer costs.

Olive Mechanization

- ◆ There are reportedly 120,000 ha of olive plantations in Iran, which had comprehensive surface or drip irrigation systems installed. The cost of hand harvesting is the major constraint.
- ◆ Number of mechanical **shaker harvesters** had been **imported** by the AMDC for evaluation. These were hand held, tractor mounted and self-propelled types.







Ministries, Institutes, Organizations Relevant to Agr. Machinery

1-Ministry of Industries and mines

This ministry is in charge of issuance of establishment permit`s production license as well as determining the production capacity of the industrial units.

2 -Ministry of Jihad-e- Agricultural

Several institutes are under this ministry and their duties are as follows:

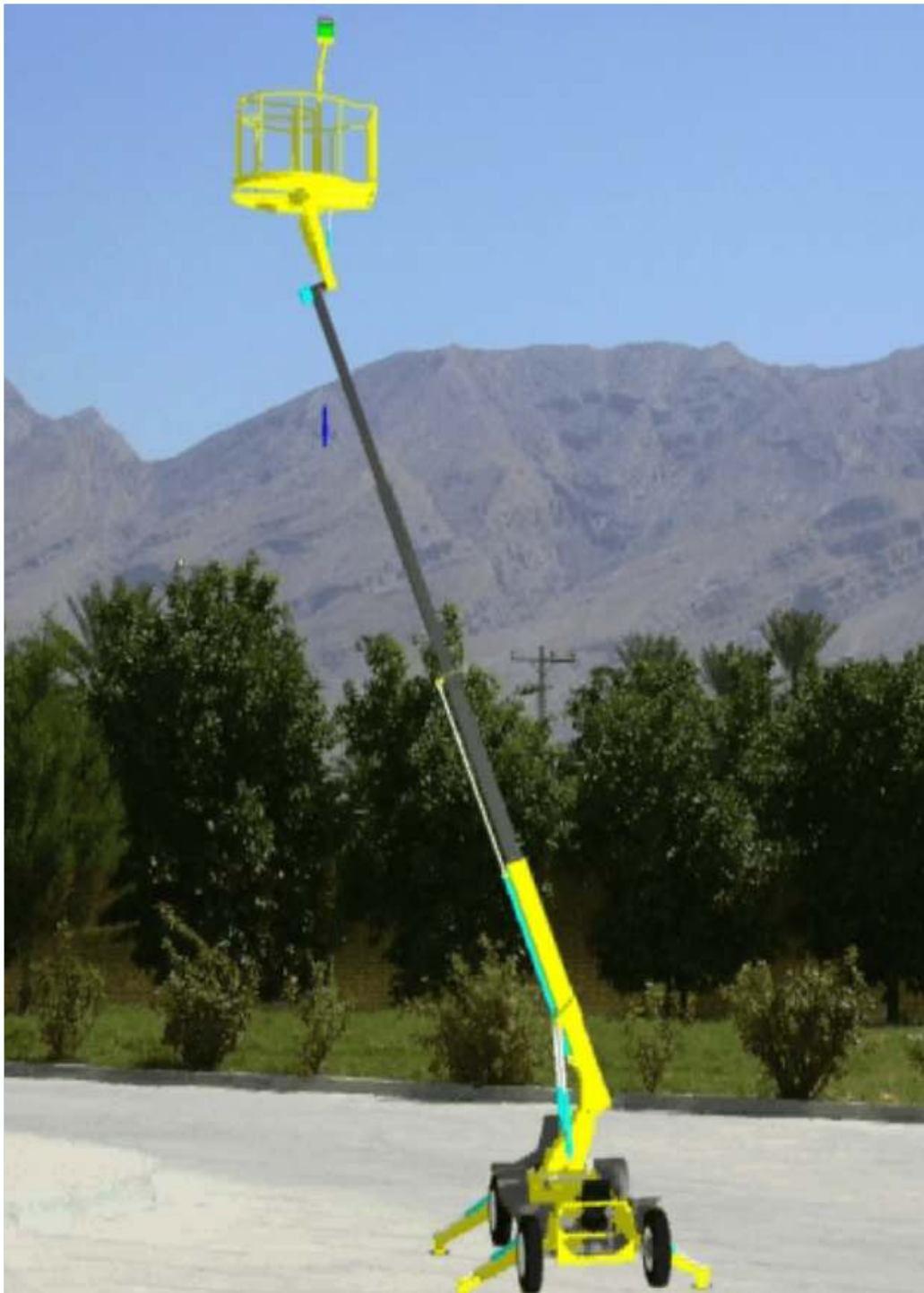
- A) Agricultural Mechanization Development Center
- B) Institute of Agricultural Engineering and Technical Research
 - 1 - Agricultural Machinery Testing Center
- C) Training & Promotion org.

Agricultural Mechanization Development Center

- ◆ Fabrication of primary samples (**Prototypes**) of agricultural machinery Project .
- ◆ Supporting and supervision of mechanization **service units** Project .
- ◆ Development and supporting **modern technology** of Agricultural machinery and equipments Project.

Agricultural Machinery for pilot projects 2008

Peanut harvester	Onion harvester
Almond Shell husker	Cereals harvester
Potato combine	Date harvester
Conservation of agr. machinery	Shakers
Vegetable transplanter	Grafter
Vegetable harvester	Walnut shell husker (green)
Blower machine	Aquatic equipment (oxygen dis.)
Fish pump	Sheep sharing equ.
Apple & orange harvester	Direct seeding machine







Institute of Agricultural Engineering & Technical Research

- ◆ This institute researches different subjects such as agricultural machinery , irrigation equ. and horticultural projects . some result which find out may use in agricultural section.
- ◆ **Agricultural Machinery Testing Center** with a background of more than forty years and enjoying of experienced experts has very effective role in the field of testing , evaluating and controlling the quality and performance of import and local made with national and international standards.

Ministry of Commerce

- ◆ This ministry has a very important and significant roles in the field of import and export of agricultural machinery.



Agricultural Bank

- ◆ Agricultural Bank is a financial source, it supplies loan to purchaser of agricultural machinery. To support purchasers of agricultural machinery, agricultural mechanization development center has taken action to supply and allocate subsidy aids and provide technical facilities to applicants of agricultural machinery

Universities

- ◆ State universities have developed their own capability in specialized agricultural engineering R & D in the field of agricultural machinery and equipments .

Scientific and Industrial research Institute of Iran

- ◆ This institute absorbs the experts of different field and also encourages and supports the **innovations** plans.

Extension of Agr. Machinery

- Short terms training for farmers has done through the department of extension of ministry of Jihad-e- agriculture. The following table shows the number of trainees and courses which held during year 2007 in different provinces through demonstration and practice.

No	Subject	Trainees	No. of Courses
1	Tractors, Repair and maintenance	1681	79
2	Pumps, Repair and maintenance	405	19
3	Pressurized irrigation	2287	105
4	Agr. Equipments	1238	60

Food and Post-Harvest Industries Status

- ❖ Food & Post harvest industries in Iran are divided in two sections :
- ❖ The activities concerned to the industrial section are under the management of the ministry of industries and mines.
- ❖ Small Industries in the field of food & post-harvest are under the management of ministry of Jihad-e-agricultural.

Food & Post-harvest of Small Industries under the management of Ministry of Agriculture (2006)

No	Type of activities		license	Exploitation	Production capacity(1000)
1	Dairy & Meat production	Dairy products	3171	292	2285477
2		Slaughter houses		30	248805
3		Meats packing		52	98205
4		Fish processing		37	99992
5		Fish cans		25	46265
6		Fish food		23	33775

No	Type of activities		license	Exploitation	Production capacity(1000)
1	orchard production	Dates packing	4000	55	81000
2		Olives packing		15	31582
1	Agriculture production	Corns packing	4392	70	678380
2					
3		Vinegars		38	28055
4		Pickles		41	45590
5		Potatoes processing		8	32730

Local Manufacturers

- ✦ **There are many small and medium sized of workshops spread all over the country. These workshops are doing design, reverse engineering and manufacturing equipment and spare parts of different kind of agricultural machinery. Beside these workshops there are some large manufacturers which produce power sources.**
- ✦ **Policy of open market and privatization is done regarding import, marketing and utilization of agricultural machinery and equipments in the country.**

Following are major products which fabricating locally.

- * **Power Source**
- * **Land Preparation**
- * **Seeding & Planting**
- * **Irrigation Eqp.**
- * **Fodder & Tuber harvester**
- * **Plant Protection**
- * **Animal Production eq.**
- * **Post harvest and others**

Type and quantity of power sources- 2007

No.	Machine name/ Model	Quantity
1	Tractors up to 45 HP	15522
2	Tractors 45-80 HP	270633
3	Tractors 80-110 HP	18250
4	Tractors 110 and More HP	3536
5	Total Tractors	307941
6	Combine harvesters	10852
7	Reapers	15266
8	Power tillers 4.5 HP	9410
9	Power tillers 7.5 HP	25637
10	Power tillers 9 HP	4766
11	Power tillers 13 HP	5729
12	Total power tillers	45542

Type and quantity of Irrigation pumps- 2007

No	Machine name/ Model	Quantity
1	Eng. Pumps up to 20 hp	94941
2	Eng. Pumps 20-40 hp	39749
3	Eng. Pumps 40-100hp	38404
4	Eng. Pumps 100 and more hp	12740
5	Total	185834
6	Ele. Pumps up to 20 hp	35797
7	Ele. Pumps 20-40 hp	35221
8	Ele. Pumps 40-100 hp	36021
9	Ele. Pumps 100 and more hp	15213
10	Total	122252

Type and quantity of Equipments - 2007

No	Machine name/ Model	Quantity
1	Mold board plows	254584
2	Chisel plows	30792
3	Disk plows	4548
4	Rotarys	7692
5	Puddlers	92
6	Disk harrows	112372
7	Rotary tillers (harrow)	1740
8	Sub-Soilers	2241
9	Land levelers	28080
10	Ditchers	37778

Type and quantity of Equipments - 2007

No	Machine name/ Model	Quantity
11	Ridgers	43577
12	Cultivators	35573
13	Furrowers	29680
14	Land preparation	642
15	Augers (post hole digger)	1369
16	Choppers- self.	126
17	Rotary cultivators (Combination)	623
18	Fertilizer dis.	47870
19	Row Fertilizer dis .	1798
20	Animal fertilizer dis.	566

Type and quantity of Equipments - 2007

No	Machine name/ Model	Quantity
21	Seed drill cum fertilizers	1734
22	Seed drills	8314
23	Deep seed drills	12593
24	Row crop planters (Mechanical)	3983
25	Row crop planters (Pneumatic)	1537
26	Semi-automatic potato planters	3288
27	Automatic potato planters	2519
28	Rice transplanters	1032
29	Tea pruners	2356
30	Tractor mounted sprayers (boom)	25616

Type and quantity of Equipments - 2007

No	Machine name/ Model	Quantity
31	Tractor mounted sprayers (Lance)	17974
32	Turbine sprayers	2735
33	Power sprayers	69089
34	Wheel barrow sprayers	29057
35	Rakes	4251
36	Balers	5050
37	Choppers	1248
38	Potato diggers	4680
39	Sugar beet diggers	8840
40	Trailers	163124

Type and quantity of Equipments - 2007

No	Machine name/ Model	Quantity
41	Corn heads	1338
42	Sun-flower heads	213
43	Tea harvesters	3723
44	Thresher-cum-cleaners	25392
45	Threshers	37965
46	Sugar beets (combine)	63
47	Cleaners	1160
48	Rice huskers	2886
49	Threshers (Rice)	2430
50	Whitening (Rice)	5072

Type and quantity of Equipments - 2007

No	Machine name/ Model	Quantity
51	Movers	7113
52	Shakers	72
53	Sheep shearing	7694
54	Beehives	1706019
55	Poultry feeders	30990
56	Feeder mixers	1134
57	Chillers	4589
58	Fish feeders	147
59	Fish sorters	187
60	Milking machine	24065
61	Dryers	10232

Information Dissemination of Agricultural Mechanization

- ❖ The main objective of this activity is to extend information about agricultural mechanization and relevant matters .
- ❖ Ministry of Jihad-e- Agriculture has different activities for information dissemination through the production of print and audio / video /web site.
- ❖ Several Magazines and Newsletter are publishing through the private sectors in the field of Agricultural Mechanization and relevant Technology.

National & International Exhibitions

No	Subject	Location	Date
1	Agricultural Machinery	Fars province	Feb 2008
2	Agricultural Machinery, Live stock ,	Isfahan province	Jan 2008
3	Agricultural Machinery and Irrigation ep.	Karaj city	Sep. 2008
4	Agricultural Machinery	Mashhad Province	Nov.2008
5	Agricultural Machinery and Irrigation ep..	Markazi Province	Nov.2007
6	Live stock , Agricultural Machinery	Kermanshah pro.	Dec.2007
7	Food processing , Agricultural Machinery	Tehran Province	Oct. 2007
8	Agricultural Machinery	Mazandaran Province	Feb. 2007
9	Agricultural Machinery Aquatic and livestock	Fars province	Oct. 2007

GLOBAL CRISES

- ✦ 3 F Crises (Food , Fuel , Financial)
- ✦ Impact of global climate change on agr. Product.
- ✦ Food security & sustainable agr.
- ❖ Recent years more emphasis has given to environmental factors , Food security and sustainable agr.

- **A . Environmental Specialize committee of I.R. of Iran, compiled :**
 - Regulation of environment.**
 - Indicated duties of several Ministries and Central bank.**





➤ **B. Replacement bill for old tractor & combine has compiled .**

- **C. Specific budget allocated for damages which cause by climate changes . This year the government allocated a budget for drought phenomenon.**



- **D.** Compiled about 170 National Standard of Agr. Machinery & Equipments .
- **E.** Custom duties has reduced for importation of Agr. Machinery .
- **F.** Lone facilities for purchasers of Agr. Machinery.



- ◆ Imported **wind blower** machine for orchard crops to protect fruits of frozen.
- ◆ Imported **ZERO TILLAGE** machines regarding conservation of agriculture.
- ◆ Imported **ulv & vlv** chemical sprayers for eliminate air craft sprayer.
- ◆ Started pilot project of **precision farming** in fars province.

- ◆ Effort to develop **irrigation** technology.
- ◆ Imported stem **chopper** to protect of **burning crop residues**.

THANK YOU