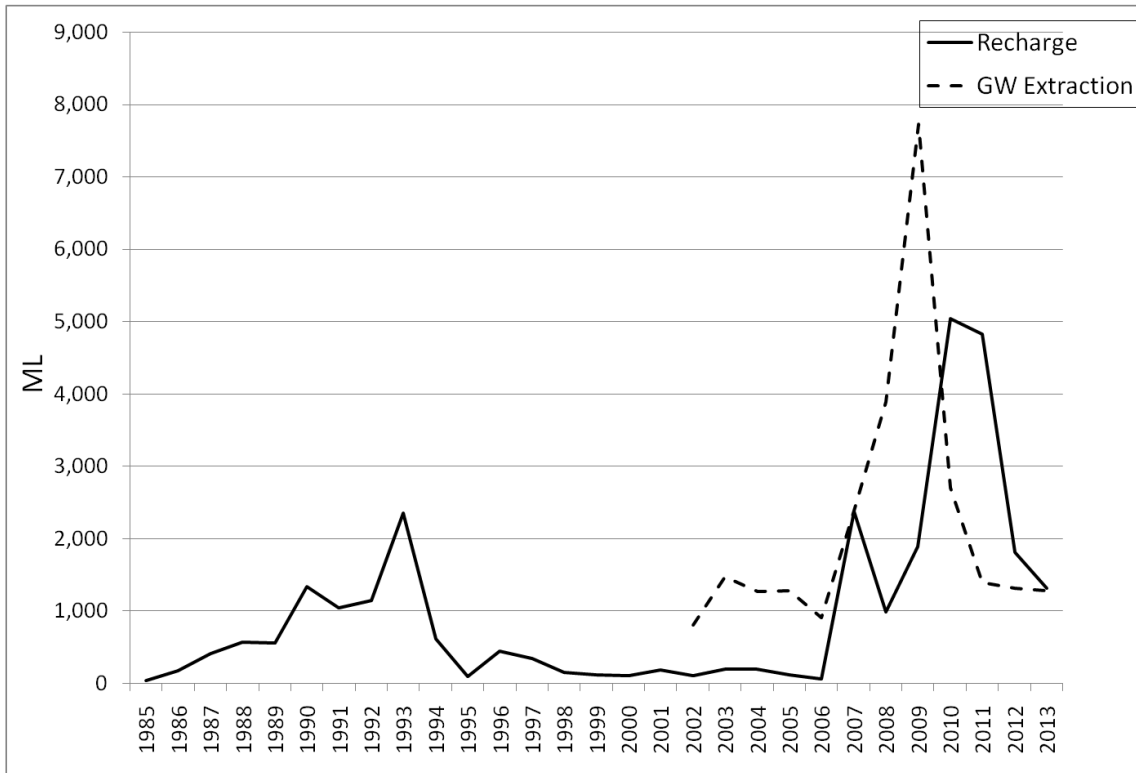
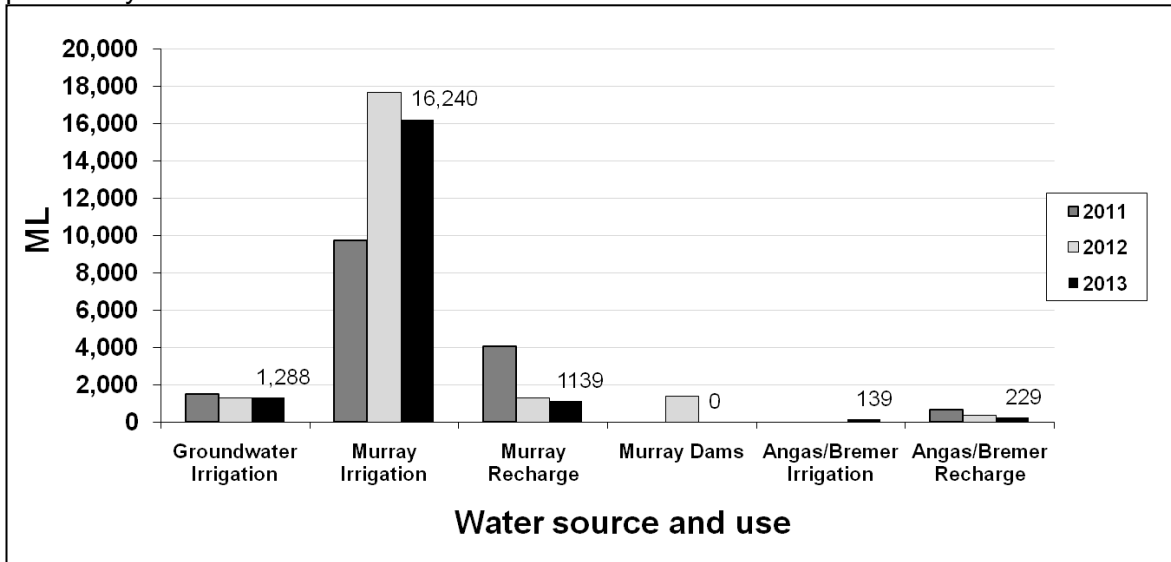


**Figure 9: Managed Aquifer Recharge (formally termed Aquifer Storage and Recovery (ASR)) :-**

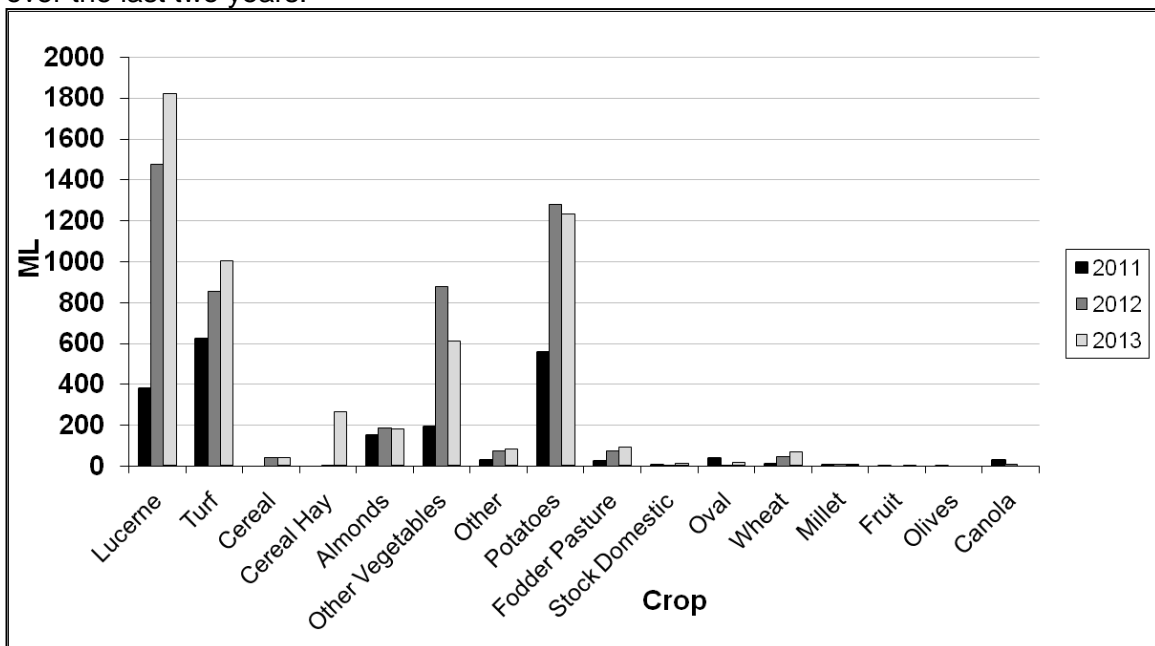
This chart shows the total volume of water artificially recharged to the aquifer from 1985 to 2013. The **1,315 ML** recharged from the rivers in 2012-2013 was lower than last year and substantially lower than the record levels achieved in 2010. This year, for the first time, the volumes recharged into the aquifer and extracted from the aquifer were very similar. Only a small number of irrigators reported the maximum and minimum salinity levels of the water used for recharge. From the reports received, the water used for recharge varied from 140 to 1400 ppm, with most under 500ppm, while groundwater salinities varied between 1000 and 6000 ppm. As the water recharged is much lower salinity than the native groundwater, this level of recharge should still contribute to a continued freshening of the confined aquifer.



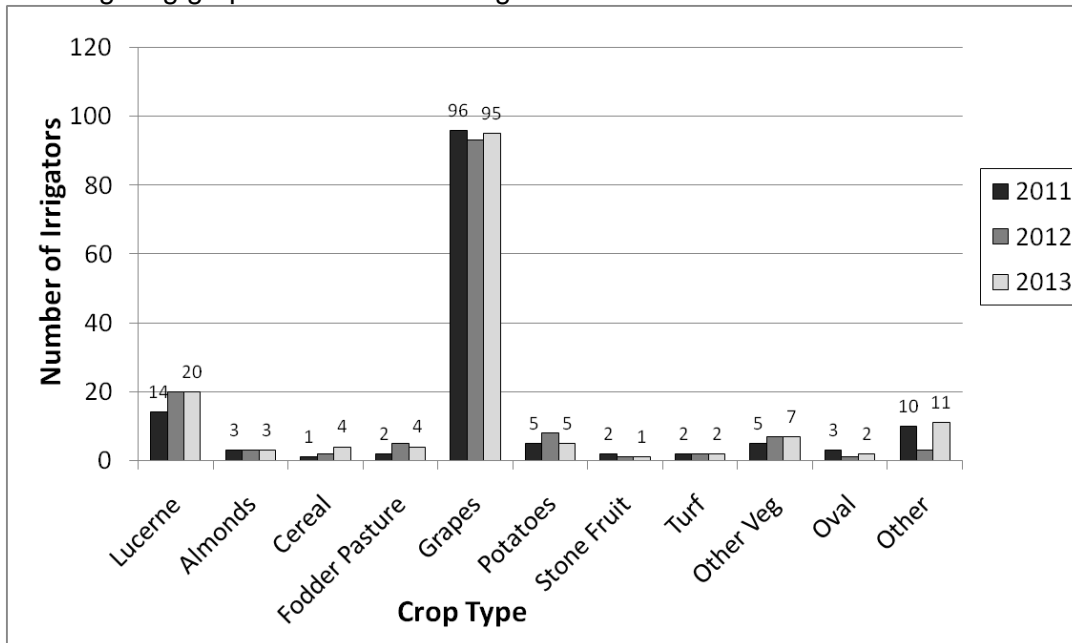
**Figure 10: Total volume of water used 2012-2013:** - The total volume of water used from all sources within the region over the year was **19,035 ML**, which was slightly lower than last year (20,108 ML) and higher than 2010-11's total of 18,479 ML. The amount of River Murray water used for both irrigation and recharging the aquifer was lower than in the previous year.



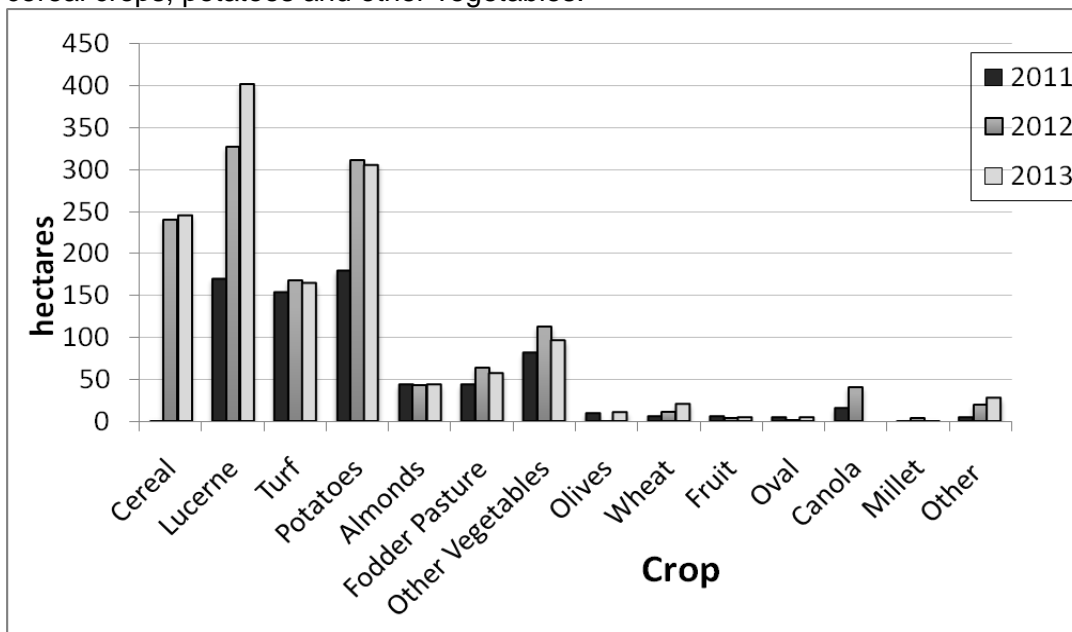
**Figure 11: Total volume of water used for each crop type:** - This volume is the total used from all sources; groundwater, watercourse water and River Murray water that was applied to each crop type (grapes excluded). **The total volume of water applied to grapes was 13,128 ML in 2012-13, compared with 11,990 ML in 2011-12, 11,275 ML in 2010-11 and 13,719 ML in 2009-10.** The volume of water used on various crops including lucerne, cereal hay, potatoes and other vegetable crops has increased over the last couple of years compared with the 2010-11 irrigation season. This corresponds with lower annual rainfall over the last two years.



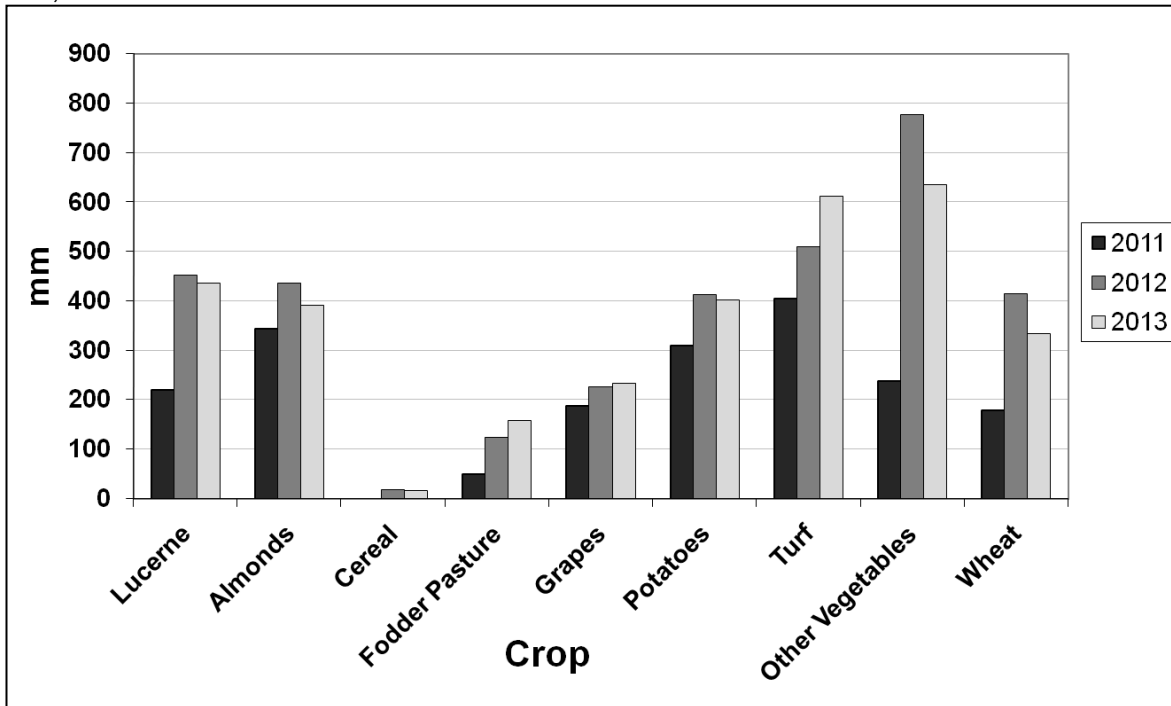
**Figure 12: Number of Irrigators for Each Crop Type:** - The number of irrigators growing each crop type in the region appears to have changed slightly over the last couple of years with less irrigating grapes and more moving into other areas of horticulture.



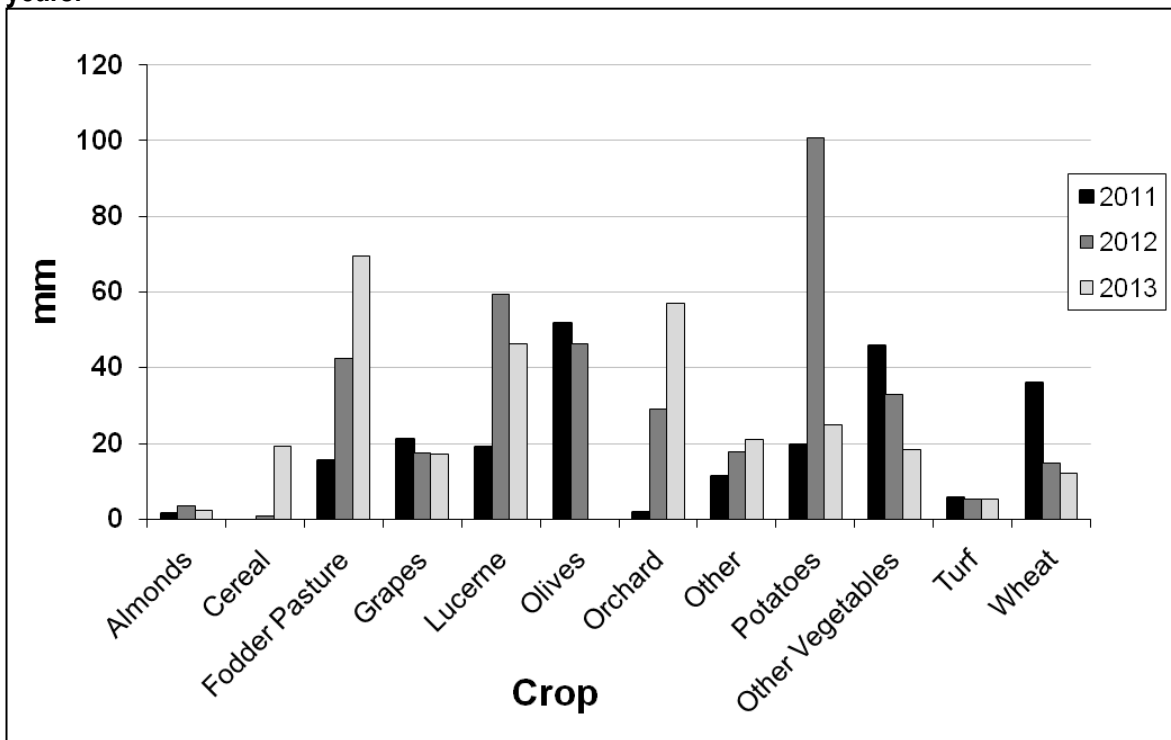
**Figure 13: Area Irrigated by Crop Type:** - The area of each crop irrigated is shown in hectares. **The area of grapes irrigated in 2012-13 was 5,641 ha, an increase compared with the 5,323 ha recorded in 2011-12, but still lower than the 5,965 ha of 2010-11 and 5,971 ha of 2009-10.** The total area under irrigation in 2012-13 was 7,203 ha, also an increase compared with the 6,687 ha recorded in 2011-12. This has brought the region back to levels not recorded since 2007-8, the last time over 7,000 ha was irrigated. (In 2006-7 the area irrigated was over 8000 ha.) The greatest increases over the last couple of years appear to be in the area planted and irrigated under lucerne, cereal crops, potatoes and other vegetables.



**Figure 14: Average total irrigation for the year by crop type:-** Irrigation is shown in mm for 2010-11, 2011-12 and 2012-13. Some crops received more irrigation water this year than last, for others less was used.

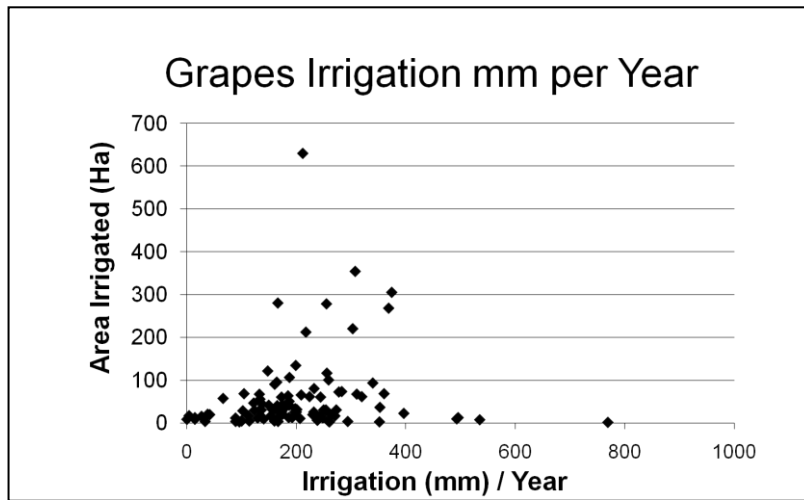


**Figure 15: Average mm of water applied per irrigation for each crop type for the last three years.**

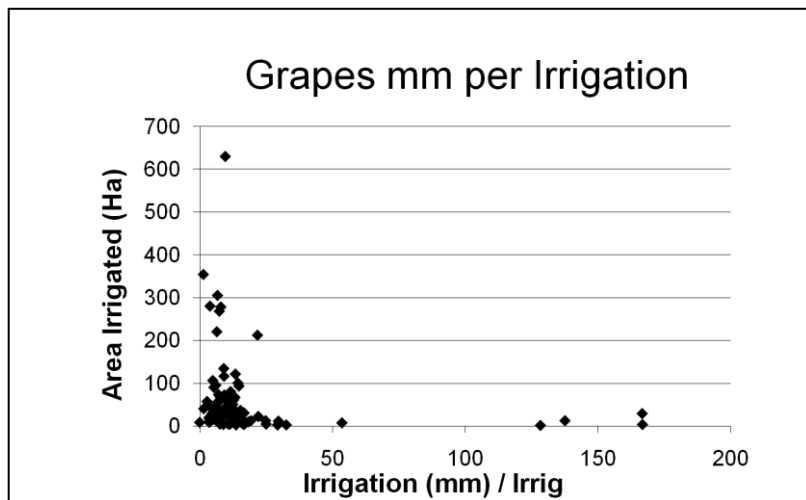


**Figures 16-20:** These charts are for the larger crops. **For each crop one chart shows (a) the mm per year and (b) the mm per irrigation.** For grapes an additional chart (16c) has been included. It excludes those irrigators who used winter flooding and applied a large volume of water in a single irrigation.

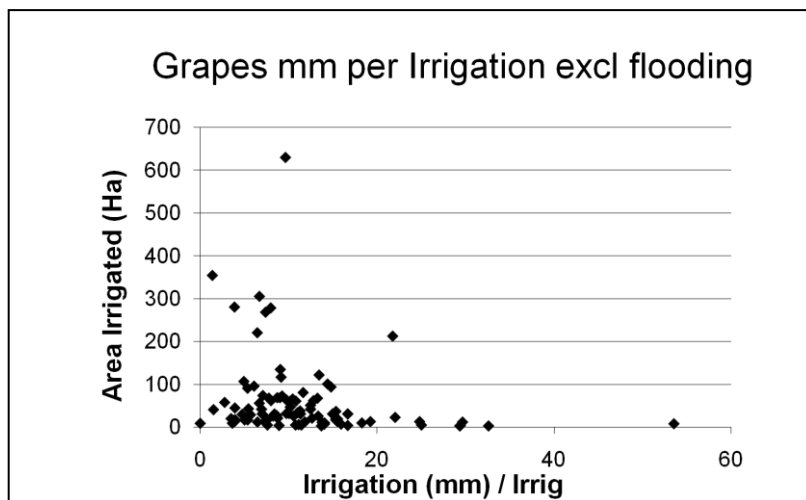
16a)



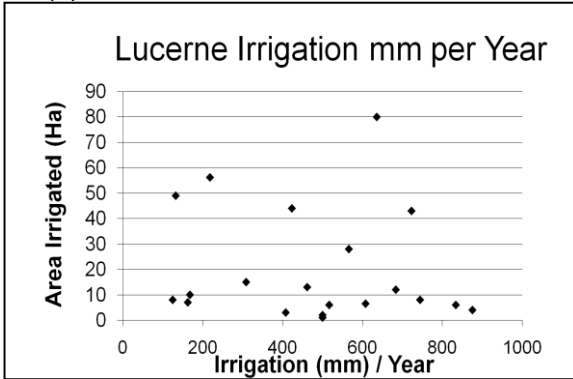
16b)



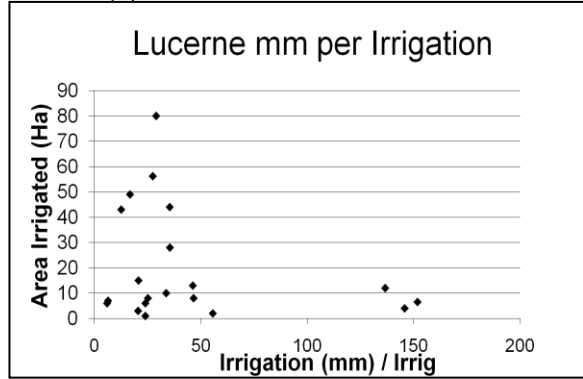
16c)



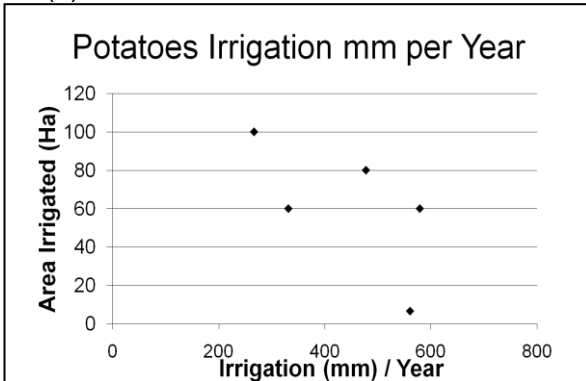
17 (a)



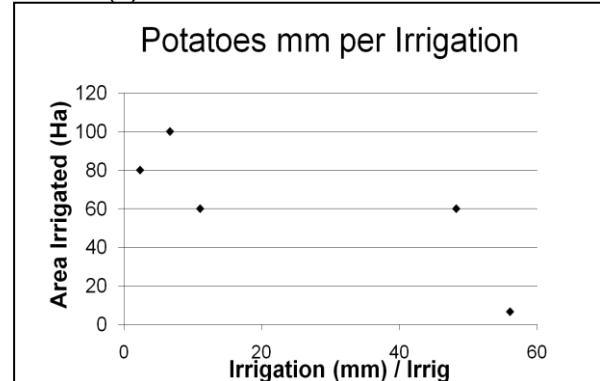
17 (b)



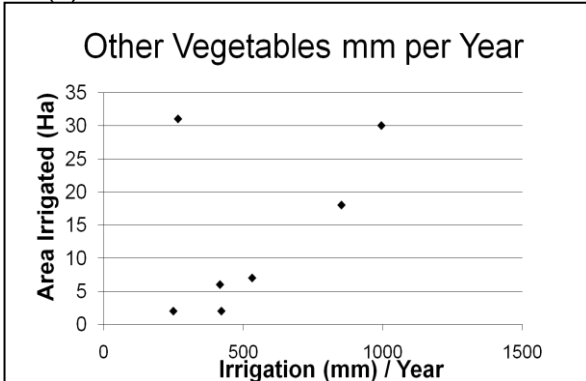
18 (a)



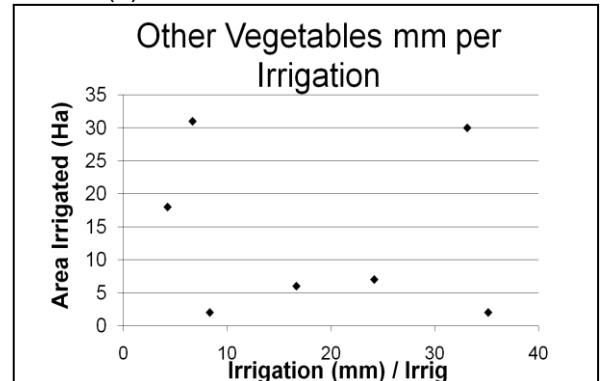
18 (b)



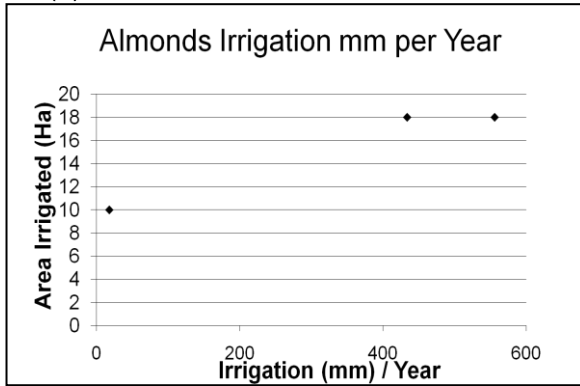
19 (a)



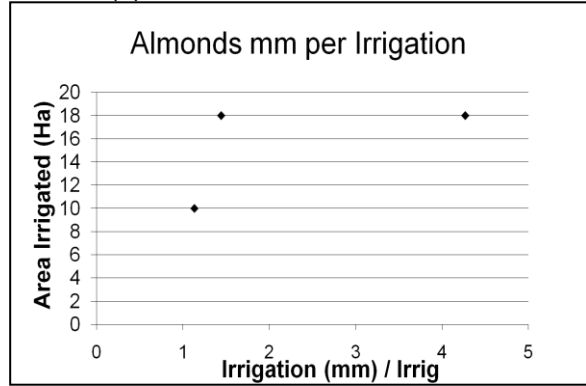
19 (b)



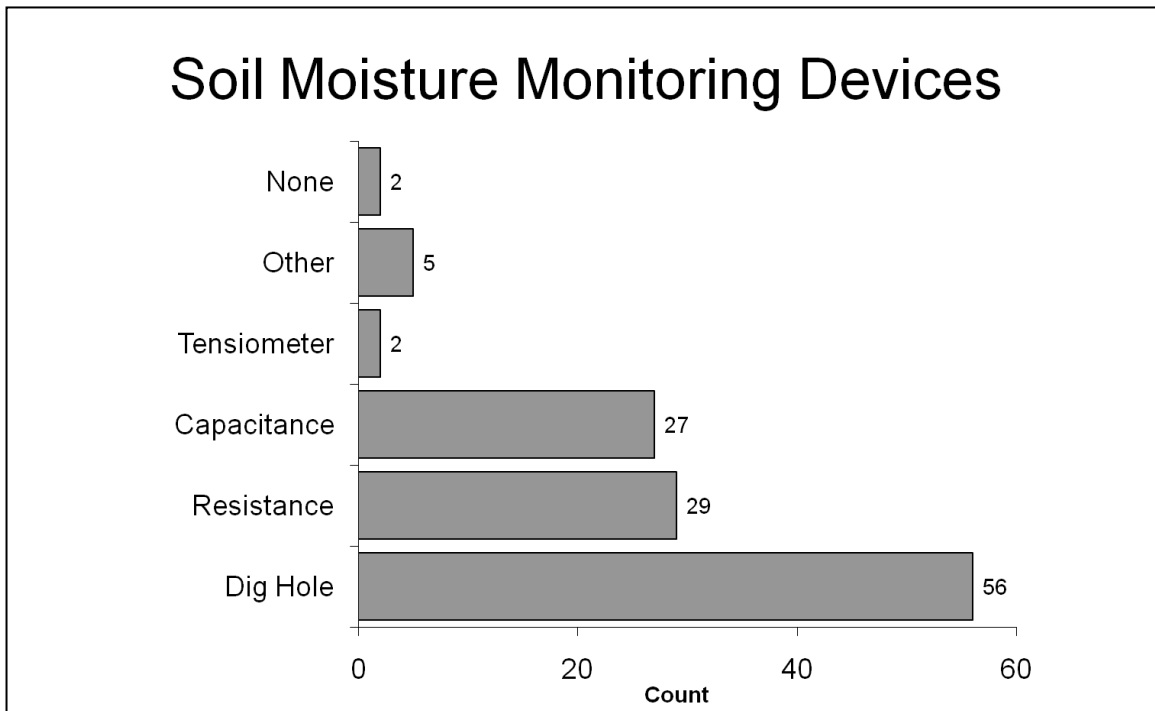
20 (a)



20 (b)



**Figure 21: Number of growers using Soil Moisture Monitoring devices:-** “Resistance” includes Gypsum Blocks. “Capacitance” includes Agwise soil moisture probes, Agrilink C probe, Dataflow Gopher, Sentek Diviner and Sentek EnviroSCAN. “Dig hole” includes Dig stick, spade, auger and post hole digger.

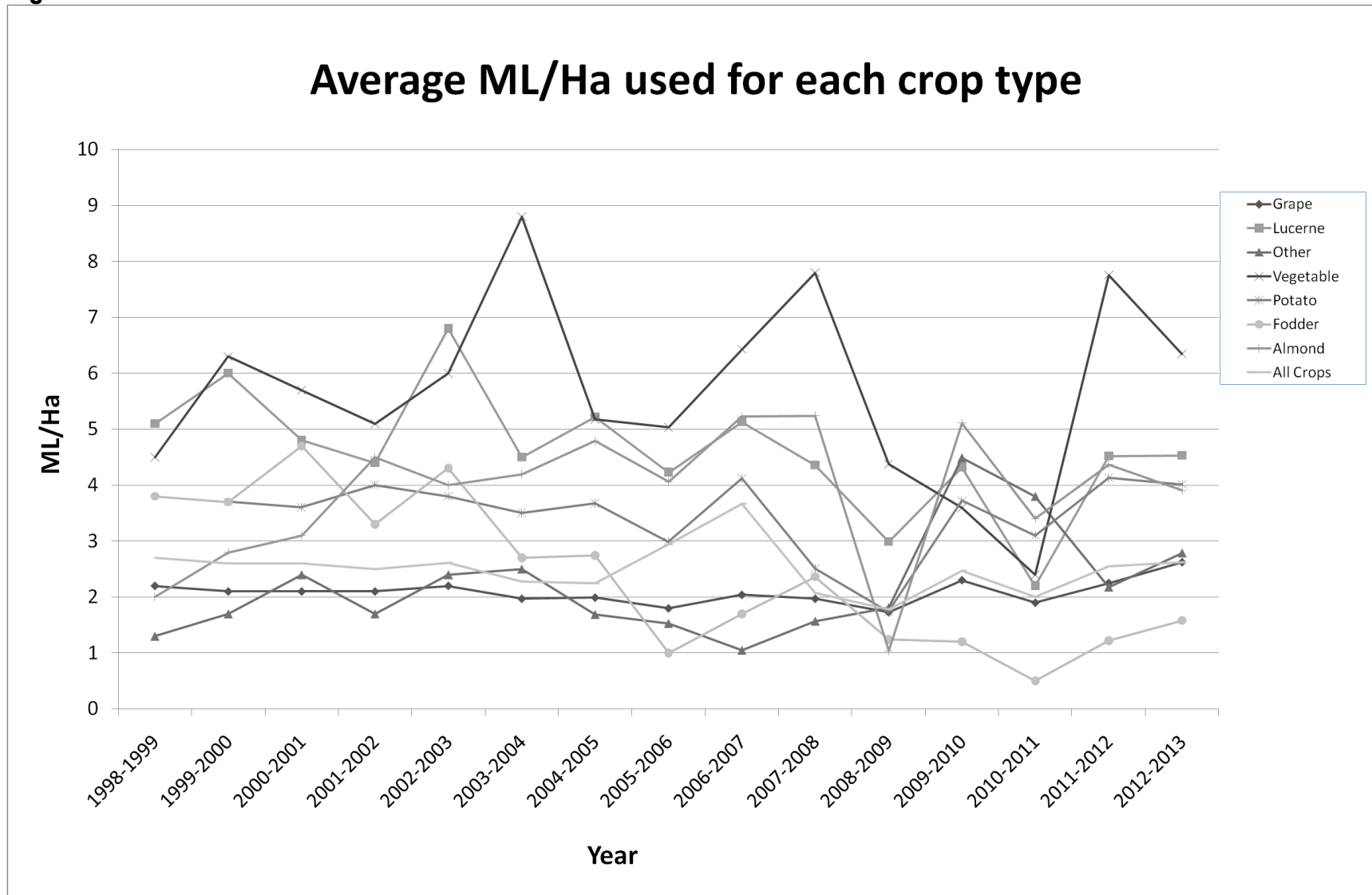


**Table 2: Average ML/ha per crop per year:-** This table shows the average ML/ha of irrigation water applied to different crop types and compares 2013 with previous years. This information is also displayed in the following Figure 22.

Year	Grape	Lucerne	Other	Vegetable	Potato	Fodder	Almond	All Crops
2012-2013	2.62	4.53	2.79	6.35	4.01	1.58	3.91	2.62
2011-2012	2.25	4.52	2.18	7.76	4.13	1.22	4.37	2.55
2010-2011	1.9	2.2	3.8	2.4	3.1	0.5	3.4	2
2009-2010	2.3	4.32	4.49	3.6	3.72	1.2	5.11	2.47
2008-2009	1.73	2.99	1.81	4.38	1.74	1.24	1.04	1.78
2007-2008	1.97	4.36	1.57	7.8	2.51	2.36	5.24	2.07
2006-2007	2.04	5.13	1.05	6.43	4.12	1.7	5.23	3.67
2005-2006	1.8	4.23	1.53	5.04	2.99	1	4.06	2.95
2004-2005	1.99	5.22	1.69	5.18	3.67	2.74	4.79	2.25
2003-2004	1.97	4.5	2.5	8.8	3.5	2.7	4.2	2.28
2002-2003	2.2	6.8	2.4	6	3.8	4.3	4	2.61
2001-2002	2.1	4.4	1.7	5.1	4	3.3	4.5	2.5
2000-2001	2.1	4.8	2.4	5.7	3.6	4.7	3.1	2.6
1999-2000	2.1	6	1.7	6.3	3.7	3.7	2.8	2.6
1998-1999	2.2	5.1	1.3	4.5		3.8	2	2.7



Figure 22



**Table 3: ML used and ha irrigated comparison chart:-**

	2012-2013	2011-2012	2010-2011	2009-2010	2008-2009	2007-2008	2006-07	2005-06	2004-05	2003-04	2002-03	2001-02	2000-01	1999-2000
Total ML	18,617	17,056	13,346	16,241	12,001	14,743	20,911	15,811	17,719	17,154	20,715	17,428	17,467	16,961
Total ha	7,107	6,687	6,687	6,578	6,748	7,049	8,370	7,739	7,869	7,509	7,934	7,089	6,788	6,625
Grape ML	13,129	11,990	11,275	13,718	10,738	12,330	12,827	11,293	11,688	11,927	13,165	11,159	10,626	10,021
Grape ha	5,641	5,323	5,965	5,971	6,199	6,245	6,271	6,170	5,876	6,059	6,059	5,357	4,991	4,665
Lucerne ML	1,820	1,477	376	657	326	675	1,437	1,378	1,791	1,608	2,560	2,051	2,040	2,491
Lucerne ha	402	327	170	152	109	155	280	325	343	354	376	471	429	418
Veg ML	610	877	193	36	57	179	373	363	638	605	647	651	769	761
Veg ha	96	113	81	10	13	23	58	72	123	69	108	103	134	121
Potato ML	1,232	1,283	555	320	131	136	1,200	1,171	1,278	1,280	1,504	1,719	1,773	1,812
Potato ha	307	311	179	86	75	54	291	392	348	360	394	425	490	485
Fodder ML	90	78	22	47	32	53	222	144	505	399	752	316	742	358
Fodder ha	57	64	43	39	26	23	130	144	184	146	173	97	157	96
Almond ML	180	188	148	225	193	231	251	195	230	203	188	246	172	164
Almond ha	46	43	43	44	44	44	48	48	48	48	47	55	55	58
Other crops ML	1,556	1,094	777	1,238	524	795	2,004	900	1,589	1,132	1,899	1,286	1,259	1,354
Other crops ha	558.5	501	206	276	282	505	906	588	936	443	777	583	533	777