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PRESENTATION NOTES TO THE
WESTERN GOVERNORS ASSOCIATION
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GOVERNOR HUNTSMAN, GOVERNORS, LT GOVERNOR, PREMIERS, DISTINGUISHED GUESTS, LADIES AND GENTLEMEN.

THANK YOU FOR THIS OPPORTUNITY TO PARTICIPATE IN TODAY'S PANEL DISCUSSION ON: *MANAGING WATER IN A CHANGING WORLD*.

FEW ISSUES ARE STIRRING AS MUCH PASSIONATE DEBATE AND DISCUSSION AS WATER, ENERGY AND NOW CLIMATE CHANGE AND THE NEXUS BETWEEN THESE ISSUES!

I WILL BE FRAMING MY COMMENTS TODAY BY REFERENCE TO MY EXPERIENCES AS A FORMER LEADER OF AUSTRALIA'S IRRIGATED AGRICULTURE SECTOR WHERE OVER THE PAST DECADE:

- ◆ PROLONGED DROUGHT;
- ◆ RECORD LOW LEVELS IN WATER STORAGES;
- ◆ DECLINING WATER RUN-OFF;
- ◆ PAST ALLOCATION DECISIONS AND MANAGEMENT PRACTICES; AND
- ◆ URBAN GROWTH

HAVE EACH CONTRIBUTED TO A MODERN DAY CATASTROPHE THAT IS CHALLENGING THE FABRIC OF COMMUNITIES, INDUSTRIES AND THE VERY SURVIVAL OF ICONIC ENVIRONMENTAL FEATURES ACROSS THE SOUTHERN MURRAY-DARLING BASIN.

COMBINED, THESE ISSUES HAVE STIMULATED UPTAKE OF TECHNOLOGY SOLUTIONS TO MEET THE CHALLENGES OF REDUCED WATER AVAILABILITY WATER EFFICIENCY AND SUSTAINABILITY.

SO WHAT ARE THE KEY DRIVERS THAT WE HAVE SEEN STIMULATE TECHNOLOGY UPTAKE?

TO BEGIN WITH, THE PREVAILING RESOURCE MANAGEMENT REGIME VERY MUCH INFLUENCES THE DEVELOPMENT AND ADOPTION OF NEW TECHNOLOGIES AND REVIEWS TO EXISTING MANAGEMENT AND BUSINESS PRACTICES.

CERTAINTY RELATING TO:

- ◆ POLICY SETTINGS;
- ◆ WATER ALLOCATION PRIORITIES; AND
- ◆ PRICING AND MARKET STRUCTURES DELIVERING TRANSPARENT MARKET SIGNALS.

EACH PROVIDE CONFIDENCE TO AND HAVE SIGNIFICANT BEARING ON INDIVIDUALS, ACCEPTANCE AND ENGAGEMENT OF REFORMING WATER MANAGEMENT PRACTICES AND THE INVESTMENT IN AND APPLICATION OF TECHNOLOGY SOLUTIONS TO IMPLEMENT CHANGE.

EXPANDING ON THESE POINTS, THE FOLLOWING ELEMENTS BEAR HEAVILY ON:

- ◆ THE STIMULATION OF TECHNOLOGY DEVELOPMENT;
- ◆ ADOPTION OF NEW TECHNOLOGIES;
- ◆ THE REVIEW OF EXISTING MANAGEMENT PRACTICES; AND
- ◆ INVESTMENT IN R&D:

- ◆ STARTING WITH ESTABLISHING BENCHMARKS THROUGH COMPREHENSIVE CATCHMENT PLANNING WITH A CLEAR FOCUS ON SUSTAINABLE USE OF AVAILABLE RESOURCES AND IDENTIFICATION OF COMPETING DEMANDS;
- ◆ THE AVAILABILITY OF ACCURATE, TIMELY DATA, PREFERABLY COLLECTED REAL-TIME;
- ◆ INDEFEASIBLE, COMPENSABLE PROPERTY RIGHTS;
- ◆ A TRANSPARENT WATER MARKET;
- ◆ AN EQUITABLE PRICING REGIME;
- ◆ BUSINESS PLANNING, WITH A FOCUS ON SUSTAINABILITY, PRODUCTIVITY AND WATER USE EFFICIENCY;
- ◆ A STRONG INDUSTRY AND GOVERNMENT COMMITMENT TO SCIENCE, R&D AND TECHNOLOGY AND PRODUCT DEVELOPMENT AND DEPLOYMENT;
- ◆ THE ROLE OF GOVERNMENT BEYOND SETTING POLICY, REGULATIONS AND COMPLIANCE: TO FACILITATE PARTNERSHIPS BETWEEN GOVERNMENT AND INDUSTRY, B2B AND INDUSTRY & COMMUNITY;
- ◆ ACTIVE REFORM PROCESSES THAT FOCUS ON THE NEED FOR SUSTAINABILITY, EQUITY, PRODUCTIVITY AND WATER USE EFFICIENCY;
- ◆ EDUCATION, TRAINING AND COMMUNICATION PROGRAMS; AND
- ◆ COMMODITY MARKET CONDITIONS AND THE PREVAILING ECONOMIC ENVIRONMENT.

NOW AS HAS BEEN OUTLINED IN THE WESTERN GOVERNORS ASSOCIATION'S 2008 *WATER STRATEGY*, NONE OF THESE POINTS WILL BE NEW TO YOU. THEY ARE NOT UNIQUE TO ANY ONE REGION, ALTHOUGH SOME MAY HAVE GREATER RELEVANCE IN CERTAIN AREAS AND AT CERTAIN TIMES.

THERE IS NO 'SILVER' BULLET SOLUTION TO THE WATER CHALLENGES THAT WE FACE. SOME SOLUTIONS ARE MORE SUITED TO PARTICULAR INDUSTRIES AND A COMBINATION OF SOLUTIONS MAY BUILD ON THE STRENGTHS AND PERFORMANCE OF OTHERS.

TO ME, THE MOST CRITICAL PIECE OF THE TECHNOLOGY DEVELOPMENT AND ADOPTION PROCESS IS THE AVAILABILITY OF TIMELY, ACCURATE AND RELEVANT DATA TO SUPPORT MANAGEMENT INITIATIVES.

‘IF YOU MEASURE IT YOU CAN MANAGE IT’

WE NEED TO PUT THE MOST RELEVANT INFORMATION INTO THE HANDS OF DECISION MAKERS AT A TIME WHEN IT WILL PROVIDE THE GREATEST BENEFIT AND HAVE THE MOST LASTING INFLUENCE.

AVAILABILITY OF DATA IS CRUCIAL TO:

- ◆ SUPPORT POLICY AND PROGRAM DEVELOPMENT;
- ◆ PROMOTE INVESTMENT AND INFORM MANAGEMENT DECISIONS;
- ◆ INFORM SCIENTIFIC STUDIES;
- ◆ REVIEW ACTIONS AND FUTURE PLANNING;
- ◆ STIMULATE RESEARCH AND DEVELOPMENT; AND
- ◆ EDUCATE AND COMMUNICATE.

ACROSS INDUSTRIES THERE IS MUCH LOW HANGING FRUIT TO BE COLLECTED IN THE FORM OF RELATIVELY EASY EFFICIENCY GAINS.

IN AGRICULTURE FOR EXAMPLES OUR STARTING POINT WAS: (USE HEADINGS ONLY)

1. DATA COLLECTION, MANAGEMENT AND ANALYSIS:

THIS ISSUE IS CRITICAL TO ALL ASPECTS OF THE WATER MANAGEMENT EQUATION. IT FEEDS INTO POLICY AND PROGRAM DEVELOPMENT, CATCHMENT PLANNING, ALLOCATION PRIORITIES, INVESTMENT AND MANAGEMENT SOLUTIONS AND EDUCATION, TRAINING AND COMMUNICATIONS PROGRAMS. IMPORTANTLY, HIGH QUALITY DATA HELPS THIRD PARTIES SUCH AS BANKS AND SERVICE PROVIDERS TO UNDERSTAND , THREATS, OPTIONS AND OPPORTUNITIES.

2. MAPPING OF FARM WATER USE MAPPING:

PRODUCING A FOOTPRINT TO UNDERSTAND WHERE, WHEN AND HOW WATER IS CURRENTLY BEING USED IS ONE OF THE MOST EFFECTIVE WAY TO RAISE AWARENESS OF:

- ◆ THE SCOPE OF WATER USAGE;
- ◆ THE IMPORTANCE OF WATER TO THE BUSINESS PROCESSES;
- ◆ RISK MANAGEMENT REQUIREMENTS; AND
- ◆ PRIORITIES TO IMPROVE WATER USE EFFICIENCY AND SUSTAINABLE PRACTICES,
- ◆ IT DEFINES THE STARTING POINT AND A BENCHMARK FOR REVIEW.

3. *HIGHLIGHTING WATER USE EFFICIENCY AND SUSTAINABILITY OF PRACTICES:*
20-30% WATER EFFICIENCY GAINS HAVE BEEN MADE WITH INVESTMENT IN TECHNOLOGIES SUCH AS:

- ◆ CENTER PIVOT SYSTEMS, HIGH PRESSURE AND DRIP DELIVERY SYSTEMS THAT DELIVER WATER DIRECTLY TO THE ROOT ZONE;
- ◆ IN-CROP SENSORS TO BETTER MANAGE CROP WATER USAGE AND IRRIGATION SCHEDULING;
- ◆ SMARTER USE OF WEATHER DATA
- ◆ REVIEWING CROP SELECTION.

IN MANY INSTANCES, CROP YIELDS HAVE ALSO RISEN MARKEDLY AND INPUTS SUCH AS ENERGY COSTS, CHEMICALS AND FERTILIZERS HAVE BEEN REDUCED AS WELL, DELIVERING MULTIPLE BENEFITS FROM THESE MANAGEMENT PRACTICES.

4. *EDUCATION, TRAINING AND COMMUNICATIONS PROGRAMS:*

PASSING ON EXPERIENCES AND PROMOTING R&D OUTCOMES ARE CRUCIAL FACTORS IN DRIVING UNDERSTANDING, CONFIDENCE AND ADOPTION. INTERACTIVE AND ONLINE DELIVERY OF TRAINING PROGRAMS CAN RESPOND QUICKLY TO EMERGING ISSUES AND PROVIDE CONVENIENCE FOR END-USERS AND CAN BE USED TO PROMOTE THE EXPERIENCES OF EARLY ADOPTERS AND REINFORCE CONSERVATION, PLANNING AND MANAGEMENT MESSAGES.

5. *R&D INTO NEW TECHNOLOGIES:*

REVIEWING MANAGEMENT PRACTICES AND PERFORMANCE OF TECHNOLOGIES CONTINUE TO IMPROVE SYSTEM PERFORMANCE BEYOND THOSE INITIALLY PROMOTED. SYSTEM AUTOMATION, DATA MANAGEMENT AND AGRONOMIC ISSUES SUCH AS THE PLANT BREEDING, WATER SCHEDULING AND SOIL PROFILING ARE EACH PROVIDING SIGNIFICANT PRODUCTIVITY BENEFITS. WEATHER FORECASTING AND BETTER UNDERSTANDING THE WATER USE PATTERNS OF SPECIFIC CROPS PROMISES FURTHER WATER EFFICIENCY GAINS.

AGRICULTURE EXAMPLES:

I'D NOW LIKE TO SPEND A FEW MOMENTS BRIEFLY HIGHLIGHTING THOSE AREAS THAT HAVE GAINED GREATEST TRACTION IN THE FIELD OVER THE PAST 4-5 YEARS, STARTING WITH:

- ◆ FARM PLANNING
 - FARM LAYOUT
 - SOIL PROFILING
 - LASER LEVELING
- ◆ DATA MANAGEMENT AND ANALYSIS SO THAT BENCHMARKS CAN BE ESTABLISHED
- ◆ CENTRE PIVOT AND LATERAL MOVE SYSTEMS (REDUCING USE OF FLOOD SYSTEMS)

- ◆ HIGH PRESSURE AND DRIP DELIVERY (DRAMATICALLY REDUCE EVAPORATION AND LEAKAGE LOSSES)
- ◆ IN- CROP SENSORS, REMOTE SENSING AND REMOTE CONTROL SYSTEMS THAT GIVE A BETTER UNDERSTANDING OF IN- CROP WATER USAGE AND SUPPORT VARIABLE AUTOMATIC WATER SCHEDULING
- ◆ GPS SYSTEMS FOR VARIABLE RATE MANAGEMENT AND YIELD ANALYSIS
- ◆ SATELLITE TECHNOLOGIES
- ◆ COMMUNICATIONS APPLICATIONS
- ◆ GREATER USE OF PREDICTIVE WEATHER INFORMATION
- ◆ BMP AND EDUCATION, TRAINING AND COMMUNICATIONS PROGRAMS
- ◆ RISK MANAGEMENT THROUGH COMMODITY CHOICES
- ◆ R&D INVESTMENT (PLANT BREEDING)

OUTCOMES:

ACROSS THIS SUITE OF PRACTICES THERE HAVE BEEN SOME VERY STUNNING WATER USE EFFICIENCY ACHIEVEMENTS:

- ◆ 20-30% WATER EFFICIENCY GAINS PLUS SIMILAR YIELD INCREASES AND INPUT SAVINGS HAVE BEEN ACHIEVED.
- ◆ THESE GAINS FEED INTO THE BUSINESS CASE TO SUPPORT INVESTMENT IN NEW TECHNOLOGIES WHICH CAN BE EXPENSIVE;
- ◆ CHANGES TO MANAGEMENT PRACTICES CAN FREE UP WATER FOR EXPANDED PRODUCTION, OR THE WATER SAVED CAN BE SOLD OR LEASED TO FUND TECHNOLOGY AND FARM LAYOUT CHANGES
- ◆ IN INSTANCES WHERE INFRASTRUCTURE IMPROVEMENTS ARE FUNDED BY GOVERNMENT, WATER SAVINGS ARE APPLIED TO ENVIRONMENTAL PROGRAMS

FOR URBAN COMMUNITIES AND BUSINESSES AND ENERGY PRODUCERS, SIMILAR ISSUES ARE PREVALENT AND THE GAINS THAT HAVE BEEN ACHIEVED ARE NO LESS IMPRESSIVE.

GAPS:

BY NO MEANS HAVE WE ADDRESSED ALL OF THE CHALLENGES CONFRONTING US. THE APPLICATION OF TECHNOLOGIES FROM OTHER SECTORS WILL HELP FILL GAPS IN OUR KNOWLEDGE BASED AND IN IMPORTANTLY INTRODUCE NEW IDEAS AND SOLUTIONS THAT MAY HAVE STARTED LIFE IN A TOTAL DIFFERENT FIELD.

THERE ARE ALREADY MANY EXAMPLES OF SUCCESS IN THIS AREA AND THE ENGAGEMENT OF ORGANIZATIONS SUCH AS IBM PROMISES TO BRING MORE MUCH EXPERTISE AND INVESTMENT TO FOCUS ON OUR CHALLENGES.

SUMMARY

EACH OF THESE AREAS ARE INTEGRAL TO THE SUCCESSFUL MANAGEMENT OF OUR WATER RESOURCES.

IT IS IMPORTANT TO RECOGNIZE THAT THE PAST DECADE HAS REVEALED THE DEPTH OF TALENT, INGENUITY, INNOVATIVE SPIRIT AND COMMITMENT OF INDIVIDUALS, ENTERPRISES AND INSTITUTIONS WHO HAVE COLLECTIVELY RESPONDED TO WATER RESOURCE MANAGEMENT CHALLENGES AS THEY HAVE ARE EMERGED.

WE MUST PROVIDE INCENTIVE FOR AND RECOGNITION OF THESE EFFORTS TO FOCUS THE ENDEAVORS OF THE BRIGHTEST AND BEST ON THE MANAGEMENT CHALLENGES AND OPPORTUNITIES THAT LIE BEFORE US.

TECHNOLOGY SOLUTIONS WILL GREATLY ENHANCE THE ECONOMIC AND SOCIAL UTILITY WE CAN GAIN FROM THE USE AND REUSE OF AVAILABLE WATER RESOURCES.

OUR PLANNING AND DECISION MAKING PROCESSES WILL NEED TO BE FOCUSED ON LONG-TERM OUTCOMES, WITH MANY PRESSING SHORT-TERM PRIORITIES. MOST INVESTMENTS WILL BE IN LONG-LIFE ASSETS. MANY WILL BE EXPENSIVE, PRIORITIES WILL NEED TO BE ESTABLISHED, CHOICES MADE, PAST PRACTICES CRITICALLY REVIEWED.

BUT IT WILL ALSO REQUIRE COMMITMENT FROM ALL USERS, POLICY SETTINGS THAT STIMULATE DEVELOPMENT AND ADOPTION OF NEW TECHNOLOGIES AND ONGOING INVESTMENT IN SUSTAINABLE PRACTICES TO ENSURE THAT WE KEEP PACE WITH EMERGING DEMANDS AND CHANGES SUCH AS THOSE ASSOCIATED WITH POPULATION GROWTH, GLOBAL FOOD PRODUCTION AND CLIMATE CHANGE.

THANK YOU!



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