



### From Secretary General's Desk...

Dear Colleagues,

This Issue of the News UPDATE is dedicated entirely to the outcomes of the 22nd ICID Congress and 65th IEC meeting held earlier this month from 14-20 September 2014 in Gwangju, South Korea. Although, you will soon be receiving the post congress proceedings and the Minutes of the 65th IEC meeting, the issue aims at bringing the important outcomes to the knowledge of those who could not attend the Congress and also for those attended the Congress and the IEC meetings 'the decisions in a nutshell' that they helped to take at the IEC.

I would like to take this opportunity to welcome our new President Dr. Saeed Nairizi (Iran), who is very well known in ICID community. I also welcome Dr. Mohamed Abd-El-Moneim Wahba (Egypt), Dr. Ding Kunlun (China) and Mr. Bong Hoon Lee (Korea) who have been elected as Vice Presidents for the period 2014-17.

In the typical efficient and grand style, our Korean hosts made the event a memorable one and a grand success on many counts. On behalf of you all, I would like to place on record our deep appreciation for the National Organizing Committee under the leadership of Dr. Lee, Sang-Mu, Chairman of KCID.

Looking back at the activities during the last three years, since the 21st Congress in Tehran, under the dynamic leadership of Dr. Gao Zhanyi, I am sure you will agree that his term has been a period of vision, change and consolidation. I sincerely thank him for the support and guidance he provided to the Central Office in fulfilling its mandate of facilitating the change and implementing his vision.

With Best wishes,

Avinash C. Tyagi  
Secretary General

## 22<sup>nd</sup> ICID Congress and 65<sup>th</sup> IEC meeting 14-20 September 2014, Gwangju, Republic of Korea

### Opening Ceremony

The gala opening ceremony of the 22nd ICID Congress and 65th IEC meeting and exhibition was inaugurated on 14 September at the multi-purpose Kimdaejung Convention Center, Gwangju Metropolitan City, Republic of Korea with more than 1200 participants, which includes around 500 foreign participants. Dr. Lee, Sang-Mu, Chairman of the National Organizing Committee (NOC) and CEO of Korea Rural Community Corporation welcomed the delegates. President Gao Zhanyi delivered a congratulatory message.

A congratulatory video message from President Park, Geun-hye, was projected, wherein she emphasized that it is high time that the global community came together to confront the pressing issues of natural disaster, food security and sustainable development of the agricultural industry. President Park, Geun-hye emphasized that the theme of the Congress "Securing Water for Food and Rural Community under Climate Change" is very timely and meaningful. Live recording of the video can be seen from ICID YouTube channel <<http://www.youtube.com/watch?v=2Bnnao51pd0>>

The opening ceremony was graced by the presence of H.E. Dr. Lee, Dong-phil, Minister of Agriculture, Food and Rural Affairs, Republic of Korea, H.E. Mr. Luvsanvandan Bold, Minister of Foreign



Affairs from Mongolia and H.E. Zerubabel Nyiira, Minister of Agriculture, Animal Industry and Fisheries from Uganda and H.E. Li Guoying, Vice Minister of Water Resources from People's Republic of China.

During the ceremony water from eight famous rivers from: Amazon, Colorado, Rhine, Nile, Euphrates, Ganges, Yellow River and Youngsan River, which covers five continents, were brought together for 'Uniting River Waters'. The event was further decorated by the beautiful display of sand art. Dr. Park, Jaesoon, Co-Chair of NOC explained the philosophy behind uniting river waters and highlighted how we can achieve harmony and eradicate poverty by joining hands together.

### 9th N.D. Gulhati Memorial Lecture



The N.D. Gulhati Memorial lecture for International Cooperation in Irrigation and Drainage, established in the name of Late President Hon. N.D. Gulhati was delivered by Mr. Jeremiah R. D. Lengoasa, Deputy Secretary-General, World Meteorological Organization (WMO) on "Climate Variability and Change: Impacts on Water Availability".

The focus of the lecture was on: (i) latest scientific understanding on climate change; (ii) efforts being made by WMO in delivering scientific-based services through its programmes; (iii) new initiative that has been taken by the WMO in collaboration with other international agencies to provide climate information and services through its Global Framework for Climate Services (GFCS); and (iv) need for broader collaboration and cooperation among different development sectors at global as well as regional and national levels.

Mr. Lengoasa emphasized the need for closer cooperation between ICID members and WMO to work together in the field of adaptation to climate change in agricultural water management.

Full report can be accessed from <[http://www.icid.org/nd\\_gulhati\\_2014.pdf](http://www.icid.org/nd_gulhati_2014.pdf)>.

### Exhibition

The exhibition consisting of 75 booths was represented by around 40 companies. Over 120 distinguished guests including

## Newly Elected Office Bearers (2014-2017)

### President

#### Dr. Saeed Nairizi, Iran



Dr. Nairizi began his career in 1969 as an Agricultural Extension Officer with Ghazvin Development Project, a leading developer of Irrigation Projects in Iran, later switched to teaching Irrigation at Faculty of Agriculture at Mashhad University of Iran, and was the Dean of the Faculty and Member of University Board in 1980. In 1983, he joined Mahab Ghods Consulting Engineers, the largest consulting firm in Iran, as its Regional Director at Khorasan, overseeing the projects works in Irrigation, Dams and Water Supply Projects. At present, Dr. Nairizi is Head of the Board and Managing Director of TOOSSAB Consulting Engineers Co. and Chairman of the Board of RAYAB Consulting Engineers Co. of Iran.

Born in 1946 in Iran, Dr. Nairizi holds a Ph.D. Degree in Civil Engineering from University of Southampton (1977) and a Post-Graduate Diploma in Soil & Water Engineering from Cranfield University, England in 1974. He obtained his B.Sc. in Agricultural Engineering from Ahwaz University (Iran) in June 1968.

### Vice Presidents

#### Dr. Mohamed Abd-El-Moneim Wahba, Egypt

Dr. Mohamed Wahba (born in 1960), obtained his Doctorate of Philosophy in Drainage Engineering from Alexandria University, Egypt. He had contributed and participated in ICID activities in various capacities as the Secretary of the Egyptian National Committee on Irrigation and Drainage (ENCID).



Dr. Mohamed Wahba is the Coordinator of the Cooperation of Ministry of Water Resources of Egypt (MWRI) with other countries in the field of water resources (China and Iraq) and representative of MWRI in Economic and Social Commission for Western Asia (ESCWA), Committee on Water Resources (2011 till present). Presently, he is the General Director of Minister's technical office, Ministry of Water Resources and Irrigation of Egypt.

#### Dr. Ding Kunlun, China

Dr. Ding Kunlun (born in 1963), obtained Ph.D. from Silsoe College of Cranfield University, UK, with specialisation in soil and water management in 1998. Presently he is the Professor and Chief-engineer, Department of Irrigation and Drainage Engineering, IWHR and Vice Secretary General of Chinese National Committee on Irrigation and Drainage (CNCID).



#### Mr. Bong Hoon Lee, Korea

Mr. Bong Hoon Lee, born in 1955 and presently the Vice President of Korea Rural Community Corporation, obtained MS from Seoul National University with specialisation in Agricultural Engineering. He has been contributing to the ICID activities since 1988 and attended various IEC, Congresses and Conferences. He has 30 years working experience in agricultural sector and has worked in the field of planning, policy making and research for rural development.



As the Head of Four Major Rivers and Saemangeum Development Division of Ministry of Food, Agriculture, Forestry and Fisheries, he has made great contribution to drawing the compromised decision from the critical dispute for Saemangeum Project, which is the largest farmland and water resources development project in tidal area in Korea.



Dr. Lee, Dong-phil, Minister of Agriculture, Food and Rural Affairs, Republic of Korea, Dr. Lee, Sang-Mu, Chairman of the KCID & NOC, Dr. Park, Jaesoon, Co-Chairman of the NOC Mr. Yoon, Jang-Hyeon, Mayor of Gwangju Metropolitan City, President Gao Zhanyi, and Er. Avinash Tyagi, Secretary General attended the ribbon cutting ceremony and visited the stalls.

## The 22nd ICID Congress

The 22nd International Congress on Irrigation and Drainage and 65th International Executive Council meeting held during 14-20 September 2014 at Kimdæjung Convention Centre in Gwangju Metropolitan City, Republic of Korea, was attended by more than 1000 delegates from 61 countries. The main theme of the Congress was "Securing Water for Food and Rural Community under Climate Change".

During the Congress, papers were presented and discussed for two Congress Questions i.e.

Q.58: How Irrigation and Drainage play an important role in Climate Change Adaptation?

Q.59: How do Irrigation and Drainage Interventions secure food production and livelihood for rural community

In addition a Special Session on "New Partnership for Rural Development" and Symposium on "Non-point Sources Pollution (NPS) and Best Management Practices (BMPs)" were also held. A Round Table meeting on 'Irrigated agriculture and development in developing countries' has also been organized by the National Organizing Committee (NOC) during the Congress. The purpose of the Round Table (RT) meeting was to provide developing countries with opportunities to discuss food security issues and to share their own experiences to overcome the challenges. Thirteen 'Side Events' were organized on 14th, 16th and 18th September 2014 during the Congress giving an opportunity for individuals or groups bringing together a range of stakeholders to focus on one's own specific area of interest in the format of their choice.

More than 340 abstracts and 290 full length papers/posters were received from 37 countries, reviewed & edited for the Congress. An 'Abstract Volume' and a USB containing full papers was published for the Congress and made available to each registered delegate.

ICID provided scholarships to deserving 15 Young Professionals (YPs) for attending the 22nd ICID Congress. They were assigned duties/work during the Congress – assist to conduct various sessions etc., besides participating in the training workshops, specially organized for them. The outcomes on Congress Questions can be summarized as follows:

### Question 58: How Irrigation and Drainage play an important role in Climate Change Adaptation?

i. Climate change is an added stress on the increasingly complex and interlinked issues of rural development. Interventions



to mitigate the extreme impacts of climate change such as floods and drought have to be integrated in all decision making processes.

ii. Irrigation and drainage are important adaptation strategies that provide the means to mitigate negative impacts of climate change for food and water security. They generally go a long way in building resilience and promoting rural development.

iii. Negative impacts of climate change on crop yields have become more common than positive impacts. The exact problems are not well-defined in less developed regions with limited water availability, where vulnerability to climate change is higher. Therefore, it is necessary to establish effective counter-measures, assessing the past and present conditions, with innovation in methodology and state-of-the art technologies.

iv. While impacts of climate change in the atmospheric and hydrologic systems on food production are being projected, the impacts on crops, even on the major cereals, are still under initial assessment, there is a need for evaluation of the impacts of climate change on agricultural and hydrological processes, including soil-water profile, groundwater dynamics, river flow, water requirement, crop growth, drainage discharge, water quality, cropping pattern and farming system, etc. need to be evaluated and implementation of results need to be promoted.

v. Since the phenomena or factors associated with climate change and its apparent impacts are difficult to be projected with certainty, one of the more effective and feasible measures for adapting to the impacts is to take actions incrementally, as in an adaptive/trial-and-error manner, utilizing the best available past experiences and current knowledge, while collecting additional information as needed. In pursuing such an adaptive approach, a step-wise integrated assessment is effective and reliable.

### Question 59: How do Irrigation and Drainage Interventions secure food production and livelihood for rural community?

i. Securing irrigation water makes food production safe and is one of the ways to maintain – or re-settle – people in rural areas, by giving them an economic activity. It therefore contributes to securing livelihood and protects the rural population from poverty, and thus from migrating towards big cities, increasing poverty and unemployment.

ii. Multiple use of water in irrigation systems and adequate use of poor quality water as well as changes in farm and natural ecology due to irrigation and drainage are important development factors in rural areas. Attention must be paid to the role which the rural community can play in the governance of water resource and hydraulic systems, provided that relevant capacity building is carried out.

iii. Water needs are increasing for food production yet water needs for the environment have to be better satisfied; water for drinking and for hygiene must be made more available for more people. On the other hand, climate changes will result in many regions, in lower or more irregular rainfall, often making water resource scarcer. It is therefore crucial to improve irrigation efficiency. As irrigation will be compulsorily thrifter, developing water saving methods and techniques is essential.

iv. Ways for improving irrigation efficiency are through automated and rotational irrigation scheduling systems and measurement of water delivery and application. Modernization of irrigation and drainage facilities are of course a means towards water savings and therefore a better productivity of irrigation water, which can be achieved not only by implementing new technologies, but also through integrated irrigation and drainage management systems.

v. Inter-basin cooperation, either within a country or transboundary, is often the solution to cope with limited water resources or to solve water conflicts. Water use rights differ from country to country, but are often among the oldest country regulations and must be carefully taken into consideration.

## Scholarship to Young Professionals

Young Professionals from the member countries of ICID are being encouraged by providing various concessions in attending ICID meetings/ annual events/ conferences with the objective of intensifying the involvement of young professionals in ICID's activities and subsequently in the decision making processes.

15 young professionals who received scholarship (10 full and 5 partial) were exposed to the activities of ICID through active participation in various technical sessions viz. assigned as rapporteur/ coordinator of the sessions and also participated in the work body meetings of ICID.

With a view to enrich the knowledge of young professionals, two training workshops viz. (1) "Irrigation Modernization: New perspective and new tools (MASSCOTE.2)" and (2) Managing Irrigation with fresh and saline water using the SALTMED Model as a management tool" were also organized.

### Training Workshop on "Managing irrigation with fresh and saline water using the SALTMED model as a management tool"



SALTMED is a physically based model that uses an integrated approach. Unlike existing models, which were designed for a specific irrigation system or a specific process, SALTMED model is generic and can be used as a management tool for water, crops, land and N fertilizers. It can be used for a variety of irrigation systems, soil types, soil stratifications, crops and trees, water application strategies, different nitrogen applications and water qualities.

The model can run simultaneously with up to 20 different fields or treatments and produces daily output files and figures. The daily output includes: soil moisture, salinity and nitrogen profiles, plant water uptake/transpiration, soil evaporation, crop water requirement, nitrate and salinity leaching, nitrogen dynamics (mineralization, nitrification, and denitrification), nitrogen uptake, Relative yield, dry matter and final yield and groundwater level. The model has a database for soils and crops parameters and is friendly and easy to use. Vice President Hon. Dr. Ragab Ragab, CEH who has developed this integrated field scale management model, delivered the workshop. For more details on the SALTMED Model, please visit: <http://www.water4crops.org/saltmed-2013-integrated-management-tool-water-crop-soil-n-fertilizers/>.

### Training Workshop on "Irrigation modernization: New perspective and new tools (MASSCOTE 2.0)"

Responding to the demand from decision makers and managers, FAO is improving its methodology to appraise and develop irrigation management modernization plans, MASSCOTE, to assist them with managing this complexity. The MASSCOTE workshop was organized and conducted by Mr. Thierry Facon, Senior Water Management Officer, FAO. During this workshop, participants were exposed to the drivers of irrigation modernization and the key concepts underpinning modernization. The participants were exposed to how the tools such as MASSCOTE may assist in renewing their understanding of irrigation system management and support changes in the irrigation sector in their respective countries. They learnt about irrigation modernization in key countries like China, Malaysia, and Iran.



The main objectives of the training workshop were: (a) Understand the need for irrigation modernization; (b) Understand key concepts underpinning irrigation modernization and present understanding; (c) Learn about irrigation modernization programmes in key countries; ((d) Learn about the MASSCOTE methodology to appraise irrigation systems and develop irrigation management modernization plans; (e) Manipulate and apply key ideas of MASSCOTE to irrigation systems in their own countries; and (f) Understand how tools such as MASSCOTE may assist in renewing their understanding of irrigation system management and support changes in the irrigation sector in their respective countries.

" The promotion and creation of an enabling environment for sustainable youth development is equally important in the arena of sustainable effort in irrigation and drainage. It was an enhancing event and definitely a motivating one to make us close with ICID national committees at our respective region and dedicate ourselves in the programs."

- Fatiha, Ethiopia

" Thank you for such good organization of ICID Congress!!!! It was my pleasure to participate ICID Congress!!!!"

- Iuliia Danylenko, Ukraine

## Irrigation Management in Italy

Sharing of the irrigation, drainage and flood management practices among the National Committees of the member countries, **Dr. Marco Arcieri, Secretary General, Comitato Nazionale Italiano ICID (ITAL-ICID)** presented in brief the various facets of water resources management, particularly the irrigation, flood and soil management during the plenary session of 65th IEC meeting. Present below are some of the excerpts of his presentation on the irrigation status in Italy.



Water represents a basic resource for Italian agriculture, whose irrigable areas account for more than 40% in flat lands, 10% in hilly areas and 5% in mountain areas, on the whole. Furthermore, considering that more than 80% of the value of Italian agricultural production inside GNP comes from irrigated areas, water management is a strategic issue.

In Italy irrigation has ancient origins. The Romans utilized irrigation extensively in arable land and viticulture using fresh water resources and groundwater. However, the practices were individual farmers' initiatives. The first joint irrigation works were set in Southern Italy, mainly in Sicily, during the Arab domination.

The modern regulatory framework of water resources is based, in effect, upon the Royal Decree No. 1775 of the year 1933. During the 1990s and through the 2000s a profound evolution took place when several framework laws were issued governing soil protection, integrated management of water resources and environment protection of water bodies. Subsequently, decentralization laws followed and reorganized functions by redistributing competencies within the State, Regions and Administration of the Central Government.

In Italy, areas equipped with irrigation cover approximately over 3.36 million hectares. Some areas with irrigation infrastructure may not be irrigated for a variety of reasons, such as production choices, lack of water availability and infrastructures built out of proportion to productivity of the area. Approximately 1,400 schemes of different sizes are in use. Sizes range from very small to very large with very different hydraulic and structural characteristics. Schemes with high development potential --some of them are interregional schemes. The rate of utilization of irrigation infrastructures (ratio between irrigated surface and equipped

area) is 67% at national level. In absolute values, the area under irrigation covers 2.39 million hectares, 80 % of which is in the North.

As early as 1965, a gradual increase of areas implementing the sprinkler irrigation system has emerged, mostly in central regions, even if there is still a predominance of channels and infiltration flowing and later infiltration irrigation systems, corresponding to 74% of the irrigation systems nationwide in both the Northern and Southern regions.

The operational area equipped and characterized by irrigation and drainage structures is managed by 145 Consortia which are public bodies, managed by its members, which coordinate both public and private works devoted to drainage, irrigation, flood control, soil defence, protecting waters and environment. Presently, Consortia are mainly engaged in the maintenance and renovation of their works constructed earlier.

The aspects concerning irrigation systems implemented by the irrigation consortia are of particular interest, especially because in the last few decades, also resulting from environmental objectives on water conservation set by European and national policies, there has been a marked tendency to convert to irrigation systems with reduced water consumption and with a more efficient use of water (sprinkler and localized irrigation systems). The most modern networks prevail in the southern and central regions (79% and 72% respectively of pipes.

In respect of distribution to users, a significant degree of variety of irrigation practices in the organization of water distribution emerges. At a general level, different irrigation practices coexist within Irrigation agencies and take into consideration different requirements of users, the requirements of different crops grown (overall, seasonal, various phases of the cycle) and the specific time of watering in each area (soil, hydrological conditions, amounts of water, etc.). Different irrigation practices adopted in one common area are, often, associated with agriculture practice and with the structural characteristics of agricultural holdings. In the locations where greater crop diversification and high-income farming (e.g. the Liguria Region) procedures tend to be extremely variable also in circumscribed areas where one type of crop (e.g. corn) clearly prevails.



There are medium-large farms in which the procedures adopted tend to be far more standardized. Most of the management problematic issues occur generally when the method adopted is more rigid or, in any case, when the agricultural/farming structure is fragmented. Conversely, when a more flexible method is possible, or when networks are serving an area with a predominance of large land ownerships, the problems concerning satisfaction with irrigation service are mitigated.

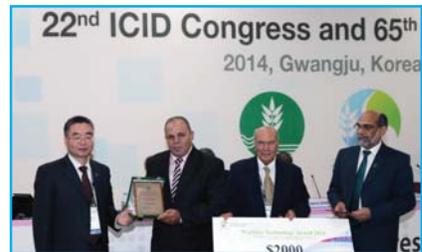
It is worth pointing out that the evolution of the functions of the irrigation network on the territory has been strictly bound to the financial resources that were available over the last decades and were implemented to modernize and/or upgrade schemes and irrigation works. In the last few years, infrastructure investment planning for the irrigation sector shows that a mechanism for coordination and consultation activities became increasingly marked among the numerous relevant Authorities responsible for the integrated Water Cycle.

A very important critical issue remains the concession system of water abstraction that shows a lack of standardization as regards criteria and evaluation of technical and economic aspects. Abstraction permits are widely diversified even within the same Regions, and apart from very few exceptions, at a regional level the system is not systematized yet. In some cases, customs that may be described as archaic persist, when allocating water concessions. From this perspective, several regional bills have contemplated a number of changes, which are still under discussion, regarding the granting systems of concessions that permit water abstraction at national and regional levels.

To conclude, therefore, nearly 20 years after the issuing of the Galli Law (Law No. 36/94) and 5 years after the issuing of the Legislative Decree 152/06 and in the prospective of finalizing proper planning of different uses of water resources at a river basin level, as required by both European and national Legislations, the lack of a comprehensive framework concerning abstractions to be granted to water bodies remains one of the most critical aspects of irrigation.

## Main Decisions taken at 65th IEC

- The Council elected Dr. Saeed Nairizi as the President and Dr. Mohamed Abd-El-Moneim Wahba (Egypt), Dr. Ding Kunlun (China) and Mr. Bong Hoon Lee (Korea) as Vice Presidents for the period 2014-17.
- Based on an analysis of the activities under Strategy Theme "Knowledge", following decisions were taken:
  - o Develop a Scoping Document for establishing a WG on Capacity Building, Training and Education
  - o Initiate distance learning through e-courses and webinars etc.
  - o Initiate proposal for special tailor made trainings on subjects of interest
  - o Revisit the publication policy of ICID
  - o Setting up mechanism to review Multilingual Technical Dictionary (MTD) and transfer it into on-line
- The Life Membership Subscription for Individual Direct Membership from Developed Countries: US\$ 900 for Individual, US\$ 600 for Individual (Retiree) and for Developing Countries: US\$ 550 for Individual, US\$ 500 for Individual (Retiree) respectively.
- The Audited Accounts of ICID for the financial year 2013-14 and the Revised Budget of ICID for the financial year 2014-15 and the Budget for the financial year 2015-16 were approved.
- Establishment of World Irrigation and Drainage Prize Corpus Fund for Payment to the WID Prize winner;
- To adopt the amendments to the ICID By-laws 2.1, 2.3, 2.5, 2.6 and 2.7 concerning Election of Office Bearers (By-law 2).
- Approval of the establishment of the Working Groups on
  - o Modernization and Revitalization of Irrigation Schemes,
  - o Institutional Aspects of Irrigation/ Drainage System Management,
  - o Irrigation Development and Management, and
  - o Sustainable Drainage Management
- Approved the Schemes for the WID Prize, the WatSave Awards, the BPNCA and the BPWA.
- The Best Performing Work Body Award was presented to Working Group on On-Farm based on the work undertaken during the past years.
- The Best Performing National Committee based on the work undertaken during the last three years was given to the Korean National Committee on Irrigation and Drainage. A trophy was presented to KCID instead of the rotating trophy presented during the past.
- The Best Paper Award for 2014, selected out of the papers published in the ICID Journal during the year 2013, was presented to Mr. Marylou M. Smith and Mr. Stephen W. Smith for their paper titled "Case Study - Agricultural/Urban/Environmental Water Sharing in the Western United States: Can Engineers Engage Social Science for Successful Solutions?"
- The WatSave Award for Technology and Innovative Water Management were presented to Mr. Jeff Shaw (USA) for 'A computerized and automated pressurized irrigation and water supply delivery system for the South San Joaquin Irrigation District' and to Dr. Yosri Ibrahim Mohamed Atta (Egypt) for 'furrow design and maize crop planting technique', respectively.
- Seventeen irrigation structures were included in the ICID Register of Heritage Irrigation Structures.
  - o China
    1. Dongfeng Weir
    2. Mulanbei Water Conservation Project
    3. Tongjiyan Irrigation Structure
    4. Ziquejie Terraces
  - o Japan
    1. Fukarayousui Irrigation Canal
    2. Inaogawa Irrigation Canal
    3. Ogawazeki Irrigation Canal
    4. Sayamaike Reservoir
    5. Shichikayousui Irrigation System
    6. Tachibaiyousui Irrigation Canal
    7. Tanzansosui Irrigation System
    8. Tsujunyousui Irrigation System
    9. Yamadazeki Barrage System
  - o Pakistan
    1. Balloki Barrage
  - o Sri Lanka
    1. Abhaya Wewa Reservoir
    2. Nachchaduwa Wewa Reservoir
  - o Thailand
    1. Sareadphong Dam



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