

# FALKENMARK, TRAILBLAZER

TEXT | KERRY SCHNEIDER

**CELEBRATED, RESPECTED, AND A ROLE MODEL FOR GENERATIONS OF HYDROLOGISTS. BUT 25 YEARS AFTER HER OFFICIAL RETIREMENT, LADY WATER HAS NO INTENTION TO REST ON HER LAURELS. STOCKHOLM WATERFRONT SAT DOWN WITH PROFESSOR MALIN FALKENMARK.**

A glance around Malin Falkenmark's living room reveals a lifetime of achievements. Prizes and awards crowd the shelves and walls. When asked what they mean to her, the response comes without hesitation: "The prizes mean I was doing good work – nothing more."

For her, solving problems – water problems – is what brings joy. Her passion for discussion and de-tangling complex problems has touched many fellow water professionals in the past several decades. Her presence; tall, always impeccably stylish, with pearls around the neck and glasses pushed up on the forehead, is near iconic.

Malin Falkenmark will turn 90 next year. In the past 60 years she has been credited with over 400 publications – including her first book (co-author Arne Forsman) "Vattnet i vår värld" (i.e. World water) that she wrote while on maternity leave with her third child. Life hadn't begun with water, though. "Growing up, I never thought about rivers or lakes. I never knew what I wanted 'to be'. Things just happened and I was guided by serendipity."

After excelling in mathematics when graduating from her girls-only high school in Stockholm, she was encouraged to study mathematics, chemistry, and physics at Uppsala University. Among a small group of women studying those subjects at the time, she became enthralled with problem solving. "I've always had a problem in the back of my mind and the mind never stops working."

After graduation in 1951 as Fil.Mag. (Master's degree) she married and began looking for work with companies that could make use of her proficiency in mathematics. She found a series of jobs: numerical assistant at the Stockholm Royal Institute of Technology (KTH), at the Swedish Computer Development Board, and as an official at the State Pension Administration, administering the funeral expenses funds under closure. "It was cute but I was bored!"

A former university friend recommended that she apply for a physicist position advertised in the newspaper. She could not find that particular advertisement but instead found one seeking an assistant in the Ice Department of the Swedish Meteorological and Hydrological Institute (SMHI). To this day, that job remains the only water-related position Malin Falkenmark has ever had to apply for.

She was asked to study the carrying capacity of ice sheets on Swedish rivers and lakes, and wrote environmental impact reports – before that concept even existed – for Swedish Water Courts on the effects on river ice from hydropower development in regulated rivers. Impressed, her director at SMHI suggested that she return to university to specialise in hydraulics and hydrology. Since there was no established curriculum on hydrology in Swedish universities at the time, one was created for her and a SMHI colleague. In 1964 she became the first licentiate (Swedish equivalent of PhD at the time) of hydrology in Sweden.

On return from maternity leave in 1965, she was offered a position with the Natural Science Research Council (NSRC). "I was used as a snow plow. Whenever a new problem was introduced, I was asked to work on it." As the Executive Secretary of the National Committee for IHD (International Hydrological Decade), a research programme under the auspices of UNESCO, she built a broad international network and became exposed and awakened to hydrological problems in developing countries "Problems in the developing nations were completely different from the ones we had in Sweden. It was fascinating to me and through my travels my curiosity developed. Why were people in low latitudes so poor and what did water have



Malin Falkenmark

to do with it? It turned out water had everything to do with it."

As work with the NSRC progressed, others took notice. Malin Falkenmark had become a leading authority on comparative global hydrology and in the mid 1970's, the Foreign Office asked if she would be willing to accept the role as one of the UN Conference Officers at the upcoming Water Conference in Mar del Plata in March 1977. "I've always been terribly shy. Not shy in my profession but shy as a person, so I agreed while thinking that nothing would come from this request, anyway."

She was wrong. Prof. Falkenmark was nominated Rapporteur General. When asked to take her seat at the podium she was met by a never-ending applause. "I will never forget that moment. It was an applause of astonishment. The just elected rapporteur turned out to be a lady! Women were not frequent in those positions at the time."

Following her time as UN rapporteur, Malin Falkenmark helped build the water resources programmes at several Swedish universities. As Professor in Applied and International Hydrology, she supervised a series of young doctors-to-be at the Water and Environmental Studies programme at Linköping University. It was after giving a guest lecture at the Agricultural University in Uppsala in 1989, that she had a chance encounter with a young agronomy student who approached her. The student had decided to attend the lecture on a whim and, fascinated, asked her to supervise his Master study. That student was Johan Rockström – now an internationally highly renowned scientist and Director of Stockholm Resilience Center. During the last 25 years, the two have



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collaborated on numerous research projects highlighting the blue/green water paradigm, wrote two books, and developed the water resilience and planetary freshwater boundaries concepts where humans and hydrology intersect.

In 1991, Malin Falkenmark was asked to help organise annual Stockholm Water Symposia for the City of Stockholm. That event blossomed into World Water Week in Stockholm, which gave rise to Stockholm International

Water Institute (SIWI), where she is still active as Senior Scientific Advisor.

She intends to continue her work with the role of green water for sustainable development.

"It is a fundamental concept that is still not broadly accepted after all these years. Green water is a key to food production and eliminating hunger. A goal would be to close the yield gap and take an integrated approach between blue and green water management. Water is the bloodstream of the entire biosphere, supporting energy, agriculture, economic development, and ecosystems. It's a far bigger issue than drinking water, as important as it may be." ●

<p><b>1951</b> GRADUATES WITH A MASTERS DEGREE IN MATHEMATICS, PHYSICS AND CHEMISTRY</p>	<p><b>1953</b> STARTS AT SMHI (SWEDISH METEOROLOGICAL AND HYDROLOGICAL INSTITUTE)</p>	<p><b>1964</b> SWEDEN'S FIRST HYDROLOGY LICENTIATE</p>	<p><b>1965</b> STARTS AT NSRC AND PUBLISHED HER FIRST BOOK</p>	<p><b>1977</b> RAPPORTEUR GENERAL ON UN WATER CONFERENCE, MAR DEL PLATA</p>	<p><b>1986</b> THE FALKENMARK INDICATOR: USED TO DESCRIBE WATER CROWDING</p>
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<p><b>1991</b> STOCKHOLM WATER SYMPOSIUM (WORLD WATER WEEK IN STOCKHOLM)</p>	<p><b>1993</b> BLUE AND GREEN WATER CONCEPT PUBLISHED/DEVELOPED</p>	<p><b>2009</b> PLANETARY BOUNDARIES CONCEPT PUBLISHED/DEVELOPED</p>
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